

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

TQ DELTA, LLC,)
)
Plaintiff,)
) C.A. No. 13-1835-RGA
v.) Family 2
)
2WIRE, INC.,) JURY TRIAL DEMANDED
)
Defendant.)

J. Caleb Boggs Courthouse
844 North King Street
Wilmington, Delaware

Monday, January 13, 2020
9:00 a.m.
Trial Volume 1

BEFORE: THE HONORABLE RICHARD G. ANDREWS, U.S.D.C.J.

APPEARANCES:

FARNAN, LLP
BY: MICHAEL J. FARNAN, ESQUIRE

-and-

McANDREWS HELD & MALLOY
BY: PETER J. McANDREWS, ESQUIRE
BY: PAUL W. McANDREWS, ESQUIRE
BY: THOMAS J. WIMBISCUS, ESQUIRE
BY: RAJENDRA A. CHIPLUNKAR, ESQUIRE
BY: ASHLEY RATYCZ, ESQUIRE

-and-

ROBINS KAPLAN LLP
BY: DAVID A. PRANGE, ESQUIRE

For the Plaintiff

1 APPEARANCES CONTINUED:

2 MORGAN LEWIS & BOCKIUS LLP
3 BY: JODY C. BARILLARE, ESQUIRE

4 -and-

5 GOODWIN PROCTER LLP
6 BY: BRETT SCHUMAN, ESQUIRE
7 BY: DOUGLAS KLINE, ESQUIRE
8 BY: ANDREW ONG, ESQUIRE
9 BY: RACHEL M. WALSH, ESQUIRE

10 For the Defendant

11 *** PROCEEDINGS ***

12 DEPUTY CLERK: All rise.

13 THE COURT: All right. Good morning, everyone.
14 Please be seated.

15 So the only thing that I have at all on my
16 agenda here -- that's not actually true. The main thing
17 that I have on my agenda here is that I did get the two
18 letters and the deposition designations, and I don't have a
19 answer for you right now. Although I think that once we
20 take out the things that 2Wire says it's not actually
21 proposing, basically we have two different series of
22 questions and answers, and they only take up about two or
23 three pages of the transcript. So I'm reading them, but I
24 haven't finished reading them yet, but I will probably do
25 that while you're passing the exhibits back and forth to
pick the jury.

Just to refresh my memory on this, basically

1 we've got nine hours a side; right?

2 MR. PETER McANDREWS: That's right, Your Honor.

3 THE COURT: And in terms of the voir dire I'm
4 given here, Docket Item 1091, which is captioned Revised
5 Voir Dire for Family 2 trial. When we get to the lawyers of
6 the law firms that are involved in this case, I'm not going
7 to read the names. I will just turn to whoever it is you
8 want me to, Mr. McAndrews and Mr. Schuman, and you can tell
9 them whoever it is you want to introduce or name on your
10 side.

11 Okay?

12 MR. SCHUMAN: Yes, Your Honor.

13 THE COURT: Okay. Yes.

14 MR. ONG: Judge, for number five, we just wanted
15 to add Commscope to the list of entities.

16 THE COURT: Who?

17 MR. ONG: Commscope. That's C-O-M-M-S-C-O-P-E.

18 They acquired ARRIS.

19 THE COURT: They acquired who? Oh, ARRIS.

20 Okay.

21 Commscope, C-O-M-M-S-C-O-P-E?

22 MR. ONG: That's correct.

23 THE COURT: Okay. All right.

24 Is there any change to the potential witnesses
25 that are in Paragraph 9?

1 MR. ONG: No, Your Honor.

2 THE COURT: Okay. All right. And I've got the
3 preliminary jury instructions that are Docket Item 1092.

4 MR. ONG: Judge, on that one, 2Wire is
5 withdrawing its written description defense. We actually
6 agreed upon some changes to that. We can print out a new
7 copy for you if you like, or we can file it on the docket.

8 THE COURT: Well, if it's easy -- if your
9 changes are one page, and you have a new copy, I'm happy to
10 just take the new copy.

11 MR. ONG: I don't have the copy. I can tell
12 you -- I can make the changes in that copy if you prefer.

13 THE COURT: Well, okay. So just tell me what
14 page am I supposed to be looking at?

15 MS. RATYCZ: We're having some sets printed and
16 we can get those to you.

17 MR. ONG: It sounds like we're going to have a
18 set printed, and we can get those to you.

19 THE COURT: I'm sorry. Oh, you're having stuff
20 printed, and you're going to give it to me.

21 Okay. All right. Yeah, in fact, we're not
22 going to need this. I don't know what I'm thinking of.

23 Okay. So in any event, basically the plan is
24 that with nine hours a side, we're expecting some time
25 mid-day Thursday is when the testimony will end; right?

1 MR. PETER McANDREWS: Yes, Your Honor.

2 THE COURT: Okay. And did we talk the last time
3 around, because we were working with the same parameters, is
4 it play it by ear in terms of whether closing arguments are
5 Thursday afternoon or Friday morning, or do we have some
6 understanding about that?

7 MR. PETER McANDREWS: Well, the last time we
8 made it to closing arguments first thing Thursday morning,
9 although I think you gave us a little more time there. We
10 had ten hours a side, and you had extended the trial day,
11 and we shortened some breaks. So I think -- I actually
12 think it's unlikely we're going to spill over into Friday.

13 THE COURT: Well, so you're anticipating that
14 closing arguments will be some time on Thursday?

15 MR. PETER McANDREWS: Based on time that we
16 have, that's my expectation, yes.

17 MR. SCHUMAN: Sounds right to me, Your Honor,
18 actually.

19 THE COURT: Okay. And there was one other
20 thing, but I can't remember what it is. So do you all have
21 anything you want to discuss?

22 MR. PETER McANDREWS: So, Your Honor, I think a
23 few members of my team might have a few things about slides
24 and demonstratives, but I did want to raise two things. One
25 of them has to do with sealing the courtroom.

1 THE COURT: Yes.

2 MR. PETER McANDREWS: And we're willing to abide
3 by whatever, of course, Your Honor wants. There's two
4 items.

5 One is to the extent that I were to briefly
6 mention source code and what it shows during my opening
7 statement, I'm talking about a two-sentence version of that,
8 the question is: Do we need to seal the courtroom for that?

9 THE COURT: No, see that's the reason in the
10 proposed order that Broadcom submitted, I crossed out the
11 thing about closing argument because I think that whatever
12 glancing mentions there could be in them or in the opening,
13 I just don't think the balance is that the courtroom should
14 be sealed for that. You know, my impression on the experts
15 and my understanding, what I have done is said that the four
16 experts essentially are going to testify in a sealed
17 courtroom because we're going to have a transcript very soon
18 thereafter.

19 Not while the trial is going on, but in the week
20 after, you're going to have to propose any redactions or
21 probably actually it doesn't matter that much for the two of
22 you. Broadcom is going to have to propose its redactions,
23 but you know, my hope and intent is to then put the
24 transcripts that -- because, you know, some portion of what
25 any of these experts is going to say is going to be not

1 implicating confidentiality concerns at all. But it just
2 seems to me too unwieldy to have to be opening and closing
3 the courtroom every time somebody says, well, here's a
4 question. So go ahead in your opening and say whatever you
5 think you need to say.

6 MR. PETER McANDREWS: Okay. Thank you, Your
7 Honor.

8 And then the one other item as far as when the
9 courtroom is sealed, do the client representatives remain or
10 do they leave?

11 THE COURT: I think they stay.

12 MR. PETER McANDREWS: Okay. So that's all I
13 have on the sealing the courtroom issue. One somewhat
14 substantive issue, and this is an issue that appears to be
15 resolved for today, there was an opening slide that we had
16 an objection to, and if you remember, Your Honor, you issued
17 a -- very close to the Family 2 trial before the coin was
18 tossed and we went home, you issued a clarification, a claim
19 construction clarification order. And what you said that
20 the defendants could not argue is that the transceivers must
21 calculate a first difference in configuration latency and
22 then recalculate transmission parameters to reduce the
23 latency, in other words.

24 THE COURT: That's actually not what I said. I
25 said they can't argue that the claims require that.

1 MR. PETER McANDREWS: Okay. So with that in
2 mind, the recalculation is essentially saying that there's a
3 first latency, and then there's a change to a second
4 latency. And what we saw in their opening slide and we see
5 in a slide deck that we still haven't resolved for Dr.
6 Jacobsen that is up for dispute between us tomorrow. They
7 want to argue that the claims require an actual change in
8 the latency, and a change would indicate that there is a
9 first and a second, again something that you said that they
10 couldn't argue. To the extent that --

11 THE COURT: No. No. The claims, yeah, okay.

12 MR. PETER McANDREWS: That the claims require an
13 actual change in the latency, and we see that as directly
14 contrary to your clarifying opinion. So while they took the
15 slide out, I am concerned that that is going to be in
16 Mr. Schuman's opening, and I don't want that to set the tone
17 right off the bat.

18 MR. SCHUMAN: Your Honor, I'm not sure which
19 slide Mr. McAndrews is speaking to particularly, but the
20 Court's language in the order five, docket 1105, says the
21 defendants cannot argue that the transceiver must calculate
22 a first difference in configuration latency and then
23 recalculate transmission parameters to reduce the latency.
24 And that does not appear in any slide and that is what we
25 intend to argument.

1 The Court goes on in docket 1105 to say to the
2 extent the defendant wants to argue that infringement of the
3 claim element is not shown because there is no evidence of
4 an actual reduction in the difference of configuration
5 latency, it may do so. And so we're not intending to argue
6 or present any evidence that a recalculation, but there has
7 to be evidence of a reduction in the difference of
8 configuration latency.

9 THE COURT: I'm sorry, Mr. Schuman, can you just
10 repeat that last thought?

11 MR. SCHUMAN: Sure.

12 The claim, the claim itself says using
13 transmission parameters to reduce the difference in latency,
14 and what the Court's order, 1105, said at the bottom of page
15 one on to the top of page two, to the extent defendant wants
16 to argue that infringement of the claim elements is not
17 shown because there is no evidence of an actual reduction in
18 the difference of configuration latency, it may do so.

19 THE COURT: Right.

20 MR. SCHUMAN: That's certainly what we intend to
21 argue or present evidence on.

22 THE COURT: Mr. McAndrews.

23 MR. McANDREWS: An actual reduction is not an
24 actual change. It does not require change and it can't be
25 read consistent with the prior sentence that a change is

1 required. Change means that it was one thing at one time
2 and now it's something at another time, and that's exactly
3 what recalculation of transmission parameters results in, if
4 you have first transmission parameters the result in one
5 latency and then you recalculate them and then it results in
6 a second latency that is different than the first, that's
7 what they mean by an actual change. That's not required.
8 That's not the preferred embodiment.

9 THE COURT: So what I think I meant when I did
10 this order was that the defendant can argue that the claim
11 requires a particular method that is described here is must
12 calculate a first figure recalculate and recalculate
13 transmission parameters, that they couldn't do that. But as
14 it goes on to say, saying there is no evidence of actual
15 reduction by any method, that's something that I think they
16 can do.

17 MR. McANDREWS: I agree, Your Honor. So an
18 actual reduction, however, does not require a change. As we
19 explained in the briefing on this, the preferred embodiment
20 calculates transmission parameters once and once only. And
21 actually the preferred embodiment is described as the
22 example of quote using the claim language reducing the
23 difference in latency. The difference in latency that's
24 reduced is the difference between what they could have been,
25 what the latency could have been and what they're

1 constrained to at the time of the first initialization.

2 So to argue that there has to be a change is
3 contrary to that. The claim cannot be read to be
4 inconsistent with the preferred embodiment, the only
5 embodiment quite frankly, where --

6 THE COURT: Well, no, actually whether or not
7 it's consistent or inconsistent with the embodiment, that's
8 not the claim construction, it is what it is. It's too late
9 to be arguing as to whether or not it is consistent or
10 inconsistent with the only embodiment in the patent. Right?

11 MR. McANDREWS: Not if they intend to argue the
12 claim requires an actual change. What they're saying there
13 is that the claim construction requires an actual change.
14 That's not the language. It's actual reduction.

15 THE COURT: Right. So that's the point is they
16 can argue that there is no actual reduction and that's what
17 they are -- and then you haven't proven that there is, and
18 if you're trying to prove the actual reduction by some way
19 other than a change, fine. And, I mean, you're proving it
20 by some method, they're coming back -- some argument. And
21 -- but that's what the argument should be over is whether or
22 not there is an actual reduction or not. How far you get
23 there, I don't know.

24 MR. SCHUMAN: Your Honor, this was argued at
25 claim construction. It was also argued at the pretrial

1 conference. And then this order is the result of some
2 further briefing where this argument was made and considered
3 already and that's what resulted in 1105, and that's what
4 we're all here --

5 THE COURT: Right. As a general how we got to
6 this point, yeah, I remember that. So, it's hard for me to
7 -- it's very abstract to me what the two of you are talking
8 about right now in terms of what each side is going to show,
9 but presumably based on what the two of you just said right
10 here, the plaintiff is going to try to say there is actual
11 reduction, the defendant is going to say no, there is not.
12 And how that shakes out, I don't know. I'm just here to
13 hear.

14 MR. McANDREWS: Okay, Your Honor. So it does
15 appear that there continues to be a dispute over what is
16 meant by the claim construction actual reduction.

17 THE COURT: All right. Well, it's too late for
18 that.

19 MR. McANDREWS: Okay, Your Honor.

20 THE COURT: I mean, actual reduction, you'll put
21 it to the jury, but I can't keep parsing things down so one
22 of you or the other of you wins on summary judgment. We're
23 past that point.

24 MR. McANDREWS: Okay, Your Honor. Thank you.

25 THE COURT: All right. Anything else,

1 Mr. McAndrews?

2 MR. WIMBISCUS: Your Honor, Tom Wimbiscus for TQ
3 Delta.

4 Your Honor, we have some objections to the
5 opening slides and we have some housekeeping matters that
6 were reached as to narrowing the case. We would like to put
7 those on the record.

8 THE COURT: Okay. Let's take care of whichever
9 order you would like to do it.

10 MR. WIMBISCUS: I think we have an agreement to
11 narrow the case.

12 THE COURT: Okay.

13 MR. WIMBISCUS: First of all, I think we have an
14 agreement that there will be no reference to the family
15 three trial.

16 THE COURT: I hope not.

17 MR. WIMBISCUS: That's an easy one.

18 We've also dropped an accused product, the 6091
19 chip, namely the I3812B product, so that narrowed the case.

20 THE COURT: I got that there is only one chip
21 left?

22 MR. WIMBISCUS: Yes.

23 THE COURT: I think 63x68.

24 MR. McANDREWS: Yes, Your Honor, that's correct.

25 THE COURT: Okay.

1 MR. WIMBISCUS: And third, Your Honor, we
2 understand that the defendant has dropped its argument that
3 the code has not been compiled into the subject chips, so
4 that those arguments have been removed from the case.

5 THE COURT: Okay. Mr. Schuman, I take it the
6 last one there, that is true?

7 MR. SCHUMAN: That is true, Your Honor.

8 THE COURT: Okay.

9 MR. WIMBISCUS: And then last, Your Honor, we
10 understand the defendant has dropped its Section 112
11 positions on written description and that there will be no
12 argument or evidence submitted on that.

13 THE COURT: I think I saw that in the papers
14 that you already filed, or they filed. So yes, no written
15 description defense.

16 MR. WIMBISCUS: With that, Your Honor, I think
17 just the issues with respect to some of the opening slides.

18 THE COURT: All right. Is there anything before
19 we get to the slide, Mr. Ong.

20 MR. ONG: With respect to agreements, there was
21 an order or a ruling from Your Honor in the ADTRAN case
22 about whether TQ Delta can talk about timing of getting a
23 license and whether TQ Delta can talk about holdouts, we
24 agreed they would not present any evidence about timing of
25 license discussion or about what a holdout is.

1 One question we did have is in terms of if they
2 do present evidence that they sought a license from TQ
3 Delta, to what extent --

4 THE COURT: Why would we be discussing that?

5 MR. ONG: We agreed it's not relevant.

6 MR. WIMBISCUS: Your Honor, if I may address
7 that. You brought up as stated in the ADTRAN case in
8 motions in limine that TQ Delta is entitled to discuss the
9 fact that it wanted a license.

10 THE COURT: I don't know what I said exactly in
11 ADTRAN. I'm not studying the transcripts, everything I have
12 done over the last two years. But the gist of it is this,
13 what I think I would have said there, what I think I have
14 said for you all before the fact that TQ Delta says that we
15 want to license our patents, I didn't have a problem with
16 that. In terms of anything talking about conversations
17 directly with 2Wire or anything else, I don't think there
18 should be anything about that.

19 MR. WIMBISCUS: I think we're aligned on that,
20 Your Honor.

21 MR. ONG: Well, I'm not sure that we are because
22 it sounded like they were -- you were going to solicit
23 testimony that there -- TQ Delta wanted license for the
24 2Wire.

25 THE COURT: No, that didn't happen. Just in

1 generally TQ Delta is eager to license its -- this patent
2 which after all -- is eager to license actually its patents
3 generally, not talk about this patent, but its patents
4 generally, that's fine, but it shouldn't go beyond that.

5 MR. WIMBISCUS: Okay, Your Honor. Thank you.

6 THE COURT: Okay. Anything else, Mr. Ong?

7 MR. ONG: No.

8 THE COURT: All right. How about opening
9 slides?

10 MR. SCHUMAN: Before we get there, Your Honor,
11 Mr. Wimbiscus correctly stated the parties' agreement
12 regarding no reference to the family three trial or any
13 other family, for that matter.

14 THE COURT: Or any other patent being asserted.

15 MR. SCHUMAN: Right. Sort of a corollary to
16 that, though, is to the extent either side references
17 testimony, for example, an impeachment that somebody gave,
18 we're just going to reference, introduces it by saying you
19 testified elsewhere or something like that.

20 THE COURT: Yeah, or just prior sworn
21 testimony --

22 MR. SCHUMAN: Correct.

23 THE COURT: -- something like that.

24 MR. SCHUMAN: Yes, Your Honor.

25 MS. RATYCZ: Yes, Your Honor.

1 THE COURT: Okay.

2 MS. RATYCZ: So Your Honor, Ashley Ratycz for TQ
3 Delta.

4 THE COURT: Yeah.

5 MS. RATYCZ: I'll be addressing opening slides.
6 So 2Wire raised an objection with our opening slides. I
7 have a copy of them for you if you would like them now.

8 THE COURT: Okay. Let's hurry.

9 MS. RATYCZ: Slide Number 9.

10 THE COURT: I'm sorry, which one did you say?

11 MS. RATYCZ: Slide 9.

12 THE COURT: Okay.

13 MS. RATYCZ: 2Wire's objection was that it was
14 outside the scope of expert reports, and that it relies on a
15 reference -- oh, I'm sorry, not the opening slide, but that
16 it was outside the scope of the expert reports. However, as
17 an initial matter, Christopher Cahill, an inventor on the
18 patent, he'll be addressing this patent in his deposition
19 designations. Importantly, Mr. Cahill's testimony was
20 actually elicited by 2Wire's counsel, and they did not
21 object to its use during trial.

22 THE COURT: All right. I mean, it seems to me
23 pretty harmless at a very high-level generality. So
24 Mr. Ong, unless you have something real good, I'm going to
25 overrule your objection to this.

1 MR. ONG: The only thing that I would say here
2 is that -- and I have copies of Mr. Cahill's deposition
3 designations that they provided, but I would just say that
4 this is very similar to the testimony that they're objecting
5 to to Dr. Yu. And I think if they're going to argue that
6 this testimony should come in from Mr. Cahill, then this
7 should also come if from Dr. Yu.

8 THE COURT: Okay. All right. So I'M going to
9 overrule the objection. Yes, is it Ratycz?

10 MS. RATYCZ: It's Ratycz.

11 THE COURT: Ratycz, okay. Sorry.

12 MS. RATYCZ: No, that's fine. I think that was
13 the only objection on the opening slides.

14 THE COURT: Okay. Do you have any, Mr. Ong?

15 MR. ONG: We do. It is Slide 46.

16 THE COURT: Okay. Not a slide I have.

17 MS. RATYCZ: That's the direct --

18 MR. ONG: Oh, I'm sorry, I apologize.

19 THE COURT: That's okay.

20 MR. ONG: No, we do not have any.

21 THE COURT: Do we want to go --

22 MS. RATYCZ: 2Wire's opening slide.

23 THE COURT: I mean, if you have other things,
24 let's make use of the time here.

25 MS. RATYCZ: Sure. 2Wire has some objections to

1 Dr. Cooklev's slides for his direct examination regarding
2 infringement.

3 THE COURT: Okay. Sure.

4 MS. RATYCZ: I can give you the slide deck as
5 well.

6 THE COURT: Yeah, please. All right.

7 MS. RATYCZ: So if you turn to Slide 10, it's a
8 very similar slide to the one you just saw for the opening
9 statement.

10 THE COURT: Looks the same at a quick glance.

11 MS. RATYCZ: Yes, and their objection is similar
12 that it was outside the scope of the expert reports which is
13 true, it was not in his expert reports. However,
14 Dr. Cooklev -- this is not a new opinion. He actually did
15 address this topic in a declaration which is DI-852. I have
16 a copy if you'd like, which is a declaration in support of
17 TQ Delta's response to 2Wire's motion to exclude
18 Dr. Cooklev during the summary judgment phase.

19 MR. ONG: Your Honor, I can short circuit that.
20 We are withdrawing that objection.

21 THE COURT: Thank you, Mr. Ong.

22 MR. ONG: I think we were just going to cover --
23 Slide 46 was the only one.

24 MS. RATYCZ: Okay. Great. So I guess Slide
25 46 --

1 THE COURT: Thank you, Ms. Ratczyk. Okay. This
2 looks more difficult.

3 MS. RATYCZ: Yeah, I think, in general, the
4 objection was a 403 objection that there was no basis for
5 the example numbers, and that it was prejudicial and
6 misleading.

7 MR. ONG: And also that it was not disclosed in
8 any expert report.

9 THE COURT: Well, so Mr. Ong, why don't you tell
10 me what the objection is. That would be more effective than
11 having Ms. Ratycz summarize what she thinks your objection
12 is.

13 MR. ONG: Sure. One is that the tile is
14 entitled Infringement Proof and there's --

15 THE COURT: Wait. I'm sorry. I didn't quite
16 get that. Entitled Infringement Proof, yes.

17 MR. ONG: Correct. Yeah. And then it's
18 providing a hypothetical example that has nothing to do with
19 any of the accused products, and also it has never been
20 disclosed. This example has never been disclosed in any
21 submission to the Court or any expert report from
22 Dr. Cooklev or any of TQ Delta's experts.

23 THE COURT: Okay. So there's some text that's
24 highlighted in yellow. Where does that come from?

25 MR. ONG: The standard.

1 THE COURT: Oh, it comes from the standard.

2 Okay.

3 MR. ONG: That's okay, but the example portion,
4 these are numbers that have no basis in anything in the
5 record.

6 THE COURT: All right. So Ms. Ratycz, is this
7 example -- you said this example appears in some declaration
8 Dr. Cooklev did in connection with something?

9 MS. RATYCZ: That was a different slide, but we
10 skipped that one.

11 THE COURT: Oh, sorry.

12 MS. RATYCZ: This is very similar. First of
13 all, I don't know that there's any legal basis for saying an
14 expert cannot provide examples. This is not a new opinion.
15 It supports the opinions that he had in his expert report.
16 It supports the opinions in all of his declarations.

17 So as an initial matter, the numbers as well
18 are -- yes, I guess haven't been particularly disclosed;
19 however, for example, the R value which is the data rate is
20 data rates that are found in the patent and which are used
21 in an example in the patent. The N value is -- the code
22 word values are also values that are found in the patent
23 also disclosed in the standards.

24 The interleaver depth is the same situation.
25 He's applying a simple formula that's found in the patent.

1 THE COURT: So the math that is in this -- the
2 box, the main box, what you're saying is that's based on a
3 formula that's in the patent?

4 MR. RATYCZ: Yes.

5 THE COURT: And taking essentially simple math
6 and working it out, working the formula?

7 MR. RATYCZ: Yes.

8 THE COURT: Mr. Ong, you disagree with that?

9 MR. ONG: I don't have the patent memorized. I
10 don't I can't speak to that exactly, but it's not -- it just
11 hasn't been disclosed, and we do think it's misleading to
12 say it's infringement proof when it has nothing to do
13 with --

14 THE COURT: Well, just glancing through, it
15 seems like every slide in this deck has got infringement
16 proof written at the top of it, so I don't think there's
17 something particularly different about this. But based on
18 the representation that it's a formula that is in the
19 patent, you know, if the patent said A plus B equals C, and
20 then the expert got in and said, let's say A is two and B is
21 three, C is then five, I don't think we'd be having this
22 discussion. It seems to me like what this is, so --

23 MR. ONG: That's fine.

24 THE COURT: -- the objection is overruled.

25 All right. Ms. Ratycz, that takes care of what

1 you have?

2 MS. RATYCZ: Yes. And you're withdrawing your
3 objection about PTX 39?

4 MR. ONG: Yes.

5 MR. RATYCZ: All right. Thank you.

6 THE COURT: Okay. So let's get the jury, or
7 they may be on their way anyhow. Not ready yet.

8 All right. Well, apparently they're not ready
9 yet, so we can keep going.

10 THE COURT: Yes, Mr. Chiplunkar.

11 MR. CHIPLUNKAR: Good morning, Your Honor.

12 THE COURT: Good morning.

13 MR. CHIPLUNKAR: TQ Delta has issues with two of
14 2Wire's opening slides. I'll start with Slide Number 20.

15 THE COURT: Okay. These are not slides I have;
16 right?

17 MR. ONG: Your Honor, I have a copy of the
18 slide.

19 THE COURT: Sure. Okay. Thank you.

20 MR. CHIPLUNKAR: Thank you.

21 THE COURT: Okay.

22 MR. CHIPLUNKAR: If Your Honor would go to Slide
23 20, we believe the slide is highly prejudicial. For
24 example, the title says, You, the jury, are the first to
25 hear both sides of the story. That's not true. The Patent

1 Office heard both sides of the story. The patent examiner
2 went and found prior art and made a decision. The patent
3 examiner was the physical people deciding that there was an
4 invention that should be allowed to be patented.

5 THE COURT: Wait. Wait. Wait. The reason that
6 you're saying that the Patent Office heard both sides of the
7 story is what now?

8 MR. CHIPLUNKAR: The patent examiner went, found
9 prior art and applied that prior art to the patent
10 application.

11 THE COURT: Was this particular patent a subject
12 to an instituted IPR?

13 MR. CHIPLUNKAR: No. No, Your Honor.

14 THE COURT: So this is pretty much what the
15 movie that we're going to show in the first 20 minutes is
16 going to tell the jury that why do we have trials, because
17 the jury only or the patent office only -- hears one side
18 only. I mean, this seems to me to be -- it seems to me to
19 exactly track what they're going to be told in the
20 beginning, so I'm going to overrule that objection.

21 MR. CHIPLUNKAR: Okay. Your Honor, and the
22 second -- the first box on the left-hand side, the first
23 bullet point says, Only the applicant participates. That's
24 not true. The Patent Office participates as well in
25 allowing the claim. It's a back and forth in determining

1 what the scope of the claim is.

2 THE COURT: Okay. I think --

3 MR. CHIPLUNKAR: It isn't --

4 THE COURT: And you know, Mr. Schuman is not
5 going to say the patent examiners crawled under the table
6 and just surfaced to sign the patent at the end. And I
7 don't really think that's a very serious objection, so I'm
8 going to overrule that, too.

9 MR. CHIPLUNKAR: Sorry, Your Honor. If I may be
10 heard, he may not say that, but those words in the slide
11 only the applicant participates seems prejudicial.

12 THE COURT: Well, that's as opposed to the
13 potential infringer here, I'm pretty sure what that means.
14 So --

15 MR. ONG: And the picture has a patent examiner.

16 THE COURT: Yeah. In fact, the patent examiner
17 appears to be reading the patent, so I don't think that's
18 misleading. So I'm going to overrule the objection.

19 Anything else?

20 MR. CHIPLUNKAR: We had an issue with Slide
21 Number 9. That's at the time with Dr. Yu's deposition
22 testimony, so I think we should wait to address that after
23 you've had a chance to look at Dr. Yu's transcript.

24 THE COURT: Well, hold on a minute.

25 Ms. Bonsalaar, are you standing in the back of

1 the courtroom because the jury is ready?

2 MS. BONSAALAA: Yes.

3 THE COURT: So why don't we hold off and why
4 don't we get the jury in here. I think somebody is going to
5 have to move, but I'll let the staff take care of that.

6 MR. CHIPLUNKAR: Thank you, Your Honor.

7 THE COURT: Thank you, Mr. Chiplunkar.

8 All right. I guess we'll be in recess for a
9 second while the jury gets in here.

10 (Recess was taken.)

11 THE COURT: Good morning, everyone. Please be
12 seated.

13 So good morning. My name is Judge Andrews. I'm
14 a judge of the court here. We're going to select a jury in
15 a civil case that's called TQ Delta LLC versus 2Wire, Inc.
16 I'm going to ask you a series of questions to help me and
17 the attorneys in the jury selection process. Before I ask
18 any questions, I'm going to ask the deputy clerk to swear
19 the jury panel to answer all questions truthfully.

20 Could we please swear the panel.

21 COURT CLERK: Members of the jury panel, will
22 you please rise and raise your right hand. You and each of
23 you do solemnly swear, those of you who swear, and you and
24 each of you do affirm, those of you who affirm, that you
25 will true answer make to such questions as may be asked you

1 touching the matter now before the Court, so help you God,
2 those of you who swear, and you do so affirm, those of you
3 who do affirm?

4 The correct response is I do.

5 THE JURORS: I do.

6 THE COURT: All right. Be seated.

7 So the way this is going to work is I am going
8 to ask you a series of questions. As I said, if any of you
9 answer yes to any of the questions after I ask it, I'm going
10 to ask you if you raise your hand and when I call on you and
11 I will try to sort of go row by row, I'm going to ask you to
12 tell me your jury number, not answer the question, just tell
13 me what your jury number is.

14 At the end of the questions, the deputy clerk is
15 going to ask fourteen of you to take the seats over in the
16 jury box there. And after that, the lawyers and I may ask
17 those of you who answered yes to one or more of the
18 questions to come up to the bench over to my right here to
19 discuss your answers with the lawyers and me.

20 Now, the presentation of evidence in this case
21 is expected to take three days going into Thursday, and jury
22 deliberations could extend your service beyond that into
23 Friday. I tell you that and I'm now going to tell you the
24 schedule we do each day is that we start at 9:30 a.m., which
25 means you have to be here before 9:30 a.m. We generally go

1 to 5:00 p.m. We have a morning break of fifteen minutes, an
2 afternoon break of fifteen minutes, and we have a longer
3 break for lunch in the middle of the day. So that's the
4 schedule for the trial.

5 The first question is this: Does the schedule
6 that I just mentioned present a special hardship for you?
7 If the answer is yes, raise your hand.

8 Okay. In the first row, you, sir.

9 A JUROR: 31.

10 THE COURT: And in maybe the third row, you,
11 ma'am.

12 A JUROR: 32.

13 THE COURT: And you, ma'am.

14 A JUROR: One.

15 THE COURT: And maybe you, ma'am.

16 A JUROR: Two.

17 THE COURT: And you, sir.

18 A JUROR: 26.

19 THE COURT: And you, ma'am?

20 A JUROR: 19.

21 THE COURT: And you, sir?

22 A JUROR: 19.

23 THE COURT: Did you both say 19?

24 A JUROR: Yes. I'm sorry. The number is 10.

25 THE COURT: 10. Okay. And in the back row,

1 you, sir.

2 A JUROR: 4.

3 THE COURT: And you, ma'am.

4 A JUROR: 15.

5 THE COURT: And you, sir.

6 A JUROR: 9.

7 THE COURT: All right. Did I get everybody? I
8 see no further response.

9 Okay. So this is a patent lawsuit involving
10 digital subscriber line technology, Digital Subscriber Line
11 sometimes being referred to by people in the know as DSL.
12 DSL is used to provide broadband access to data networks
13 such as the internet via the copper wires of the local
14 telephone network. The plaintiff is a company called TQ
15 Delta. TQ Delta owns patents relating to DSL functionality,
16 and has sued 2Wire, Inc., who is the defendant in this case.

17 2Wire sells DSL modems. According to TQ Delta,
18 some of 2Wire's DSL modems infringe a particular patent that
19 TQ Delta holds which is U.S. Patent Number 7,453,881, which
20 is the only patent that's at issue in this case. And the
21 parties will generally refer to it as the '881 patent.

22 2Wire denies infringement and also says that the
23 '881 patent is invalid. The jury in this case is going to
24 be asked to decide whether 2Wire's products, particular
25 products infringe the '881 patent, and whether the '881

1 patent is valid.

2 For those of you who end up being on the jury,
3 I'll give more detailed instructions on the law later in the
4 case.

5 The second question is: Have you heard or read
6 anything about this case?

7 No response.

8 As a side note, if any of you have electronic
9 devices on you, do not use them to try to look up anything
10 about this case. One of the rules of trials is that
11 everything you learn about the case you have to learn while
12 you're sitting on the witness stand from the evidence that's
13 produced. So don't use your spare time here to be trying to
14 find out something about this case.

15 Now, I'm going to ask the lawyers on each side
16 to tell you what lawyers are involved with this case. And
17 the reason I do that is because I'm going to ask you
18 essentially whether you have any connection of any kind to
19 them or about them or anything else.

20 So first, for the plaintiff, TQ Delta,
21 Mr. McAndrews.

22 MR. McANDREWS: Yes, Your Honor. So the names
23 are Peter McAndrews, that's myself. There is Tom Wimbiscus,
24 James Murphy, Ana Targowska, Raj Chiplunkar,
25 C-H-I-P-L-U-N-K-A-R, Ashley Ratycz, David Crain, Ben Lindon,

1 Brian Farnan and Michael Farnan.

2 THE COURT: All right. Thank you,
3 Mr. McAndrews.

4 And Mr. Schuman.

5 MR. SCHUMAN: Good morning, ladies and
6 gentlemen. Brett Schuman, that's me. Jeff Kline, Rachel
7 Walsh, Andy Ong, Jody Barillare, Monte Cooper, David
8 Simpson, Cindy Chang.

9 THE COURT: So do any of you or to your
10 knowledge your immediate family such as spouse, child,
11 parent or sibling know any of the attorneys or law firms I
12 have just named, or that the attorneys have just stated? By
13 the way in terms of law firms, the law firms that are
14 involved are Farnan LLP, McAndrews, Held & Malloy Limited,
15 and Robins Kaplan for the plaintiff. And for the defendant,
16 Morgan Lewis & Bockius, and Goodwin Proctor. So those law
17 firms, or the individual lawyers who just have been named,
18 do you know any of them?

19 You, sir?

20 A JUROR: 29.

21 THE COURT: And have you or your immediate
22 families -- there is no further response to the last
23 question.

24 So the next question, have you or any of your
25 immediate family had any business dealings with or employed

1 by any of these attorneys or law firms?

2 29, right?

3 A JUROR: Right.

4 THE COURT: Have any of you or your immediate
5 families ever been employed by the following companies:
6 Aware, Inc., TQ Delta LLC, 2Wire, Inc., Pace Americas,
7 CommScope, or the ARRIS Group?

8 No response.

9 The companies I just mentioned, have any of you
10 or your immediate families to your knowledge ever owned
11 stock in any of these companies?

12 No response.

13 Have any of you or your immediate families ever
14 had a business relationship with any of these companies?

15 No response.

16 Have any of you or your immediate families ever
17 had any experience good or bad with any of these companies
18 that might make it difficult for you to be a fair and
19 impartial juror in this case?

20 No response.

21 So the potential witnesses in this case
22 according to what the parties have told me are the following
23 people: Dr. Kevin Almeroth, Christopher Cahill, Dr. Todor
24 Cooklev, Abha Divine, Dr. Krista Jacobsen, Benjamin Miller,
25 Mehul Patel, Mark Roche, James Shead, Marcos Tzannes,

1 Michael Tzannes, Scott Voegele, Gong-San Yu, Ed Reiter,
2 Kevin Russell and Dr. Martin Walker.

3 Are you familiar with any of these potential
4 witnesses?

5 No response.

6 Have you or any member of your immediate family
7 ever been employed by the United States Patent and Trademark
8 Office?

9 No response.

10 Have you or any member of your immediate family
11 ever applied for or obtained a United States or a foreign
12 patent?

13 In the back row, sir.

14 A JUROR: 22.

15 THE COURT: No further response.

16 Have you or any members of your immediate family
17 ever been involved in a dispute about patent rights?

18 No response.

19 Do you have any strongly held opinions about
20 whether the U.S. patent system helps or hurts the public
21 interest?

22 No response.

23 Do you have any opinions about patents, patent
24 rights, or the United States Patent and Trademark Office
25 that might make it difficult for you to be a fair and

1 impartial juror in this case?

2 No response.

3 Have you served on a jury in a civil case within
4 the last fifteen years?

5 No response.

6 Have you ever been involved in a patent lawsuit?

7 No response.

8 Is there anything about this case which as I
9 said involved DSL technology and product that would make it
10 difficult for you to be a fair and impartial juror?

11 No response.

12 If you were selected to sit as a juror in this
13 case, are you aware of any reason why you would be unable to
14 render a verdict based solely on the evidence presented at
15 trial?

16 No response.

17 If you are selected to sit as a juror in this
18 case, are you aware of any reason why you would not be able
19 to follow the law as I give it to you?

20 No response.

21 Do you have any experience with the design,
22 manufacture, or repair of electronic communications
23 equipment?

24 All right. In the first row?

25 A JUROR: 21.

1 THE COURT: I'm sorry?

2 A JUROR: 21.

3 THE COURT: And in the -- near the back.

4 A JUROR: 35.

5 THE COURT: Anybody else?

6 No further response.

7 Is there anything such as poor vision,
8 difficulty hearing, difficulty understanding spoken or
9 written English that would make it difficult for you to
10 serve on this jury?

11 All right in the first row.

12 A JUROR: 39.

13 THE COURT: And near the back, sir.

14 A JUROR: 26.

15 THE COURT: Anybody else?

16 No further response.

17 This is the last question to the group here.

18 Is there anything else including something you
19 have remembered in connection with one of the earlier
20 questions that you think you would like to tell me in
21 connection with your possible service as a juror in this
22 case?

23 All right. You, sir.

24 A JUROR: 29.

25 THE COURT: And in the back row, you, ma'am.

1 A JUROR: 28.

2 THE COURT: Anybody else? Okay. Thank you.

3 There is no further response.

4 So we will go on to the next step which is to
5 draw fourteen names out of a box.

6 COURT CLERK: Juror Number 6, will you please
7 come forward and take the first seat in the first row of the
8 jury box.

9 Juror Number 28, will you please come forward
10 and take the second seat in the first row of the jury box.

11 Juror Number 1, will you please come forward --
12 sir, sorry.

13 A JUROR: This one.

14 COURT CLERK: Number 1, will you please come
15 forward and take the third seat in the first row of the jury
16 box.

17 Juror Number 24, will you please come forward
18 and take the fourth seat in the first row of the jury box.

19 Juror Number 23, will you please come forward
20 and take the fifth seat in the first row of the jury box.

21 Juror Number 19, will you please come forward
22 and take the sixth seat in the first row of the jury box.

23 Juror Number 34, will you please come forward
24 and take the seventh seat in the first row of the jury box.

25 Juror Number 7, will you please come forward and

1 take the first seat in the second row of the jury box.

2 Juror Number 2, will you please come forward and
3 take the second seat in the second row of the jury box.

4 Juror Number 26, will you please come forward
5 and take the third seat in the second row of the jury box.

6 Juror Number 8, will you please come forward and
7 take the fourth seat in the second row of the jury box.

8 Juror Number 25, will you please come forward
9 and take the fifth seat in the second row of the jury box.

10 Juror Number 39, will you please come forward
11 and take the sixth seat in the second row of the jury box.

12 And Juror Number 30, will you please come
13 forward and take the seventh seat in the second row of the
14 jury box.

15 THE COURT: All right. Can I see counsel at
16 side-bar, please?

17 (Beginning of conference held at side-bar.)

18 THE COURT: All right. So I think the first one
19 is 28.

20 THE CLERK: Juror Number 28, can you please come
21 to side-bar?

22 THE COURT: Hello, ma'am.

23 THE JUROR: Good morning.

24 THE COURT: You are Juror Number 28?

25 THE JUROR: Yeah. I wrote it on my hand so I

1 don't forget.

2 THE COURT: So I think you answered one question
3 yes which was that there was something else you wanted to
4 tell me.

5 THE JUROR: I'm a teacher and a couple of the
6 names on the list, like I recognize last names, but I don't
7 know if they were related or not, and I didn't want it to
8 come out later that they were related. I just teach a lot
9 of kids, so there's a lot of last names.

10 THE COURT: Yeah. I don't think probably any of
11 them are related because I don't think any of them are
12 actually from Delaware.

13 THE JUROR: Okay.

14 THE COURT: Is there anybody from Delaware in
15 this group of witnesses?

16 MR. PETER McANDREWS: I'm not, Your Honor, but I
17 do have cousins that live here.

18 THE COURT: No, I'm not talking about the
19 attorneys. I'm talking about witnesses.

20 MR. PETER McANDREWS: No. No. No.

21 THE JUROR: I just wanted to make sure. I
22 haven't done this before.

23 THE COURT: Apparently nobody has in this group,
24 but no, that's fine.

25 THE JUROR: Okay. Perfect.

1 THE COURT: You can retake your seat.

2 THE CLERK: Number 1?

3 THE COURT: Yes.

4 THE CLERK: Juror Number 1, could you please
5 come to side-bar?

6 If you could just go close to the judge.

7 THE JUROR: Hi, Judge. Hi, everyone.

8 THE COURT: Hello, ma'am. So you are Juror
9 Number 1?

10 THE JUROR: I am, yes.

11 THE COURT: So I think you indicated that there
12 was something about the schedule that would make it
13 difficult for to you serve. Tell me what you had in mind.

14 THE JUROR: I apologize for wasting your time.
15 It's child care. I have three children under five at home,
16 and I'm the only --my husband and I take care of the kids.
17 I work evenings. He works days. So it's transportation for
18 my son's school. I kept him home from school today, and my
19 husband took off. It just would be -- and again, I'm sorry.
20 This is probably very stupid. It just would be difficult
21 with more days involved.

22 THE COURT: Okay. And is it something that it's
23 difficult, but manageable?

24 THE JUROR: Yes, my husband had to take off --
25 probably, yeah -- just to get my son to school.

1 THE COURT: Okay.

2 THE JUROR: I could -- we could figure it out.

3 It would be difficult, but --

4 THE COURT: Okay. Well, and if you --

5 THE JUROR: I'm sorry.

6 THE COURT: No. No, don't apologize.

7 THE JUROR: It's stupid.

8 THE COURT: It's all right. If you were
9 selected to serve, recognizing causing some difficulty at
10 home, would that impact your ability to pay attention to
11 what's going on or to, in the end, render your best effort
12 at a fair and impartial verdict?

13 THE JUROR: No, that wouldn't -- that wouldn't
14 affect me here. No.

15 THE COURT: Okay. Any follow-up questions?

16 MR. PETER McANDREWS: No, Your Honor.

17 MR. SCHUMAN: No, Your Honor.

18 THE COURT: Okay. If you could retake your
19 seat.

20 THE JUROR: I can? Sorry, everyone.

21 THE COURT: It's all right.

22 THE CLERK: Number 19?

23 THE COURT: Yeah.

24 THE CLERK: Okay. Juror Number 19, could you
25 please come to side-bar?

1 If you could stand next to the judge.

2 THE COURT: Hi.

3 THE JUROR: Hi.

4 THE COURT: Good morning.

5 THE JUROR: Good morning. I take it you are
6 Juror Number 19.

7 THE JUROR: I am.

8 THE COURT: I think you answered one question
9 yes which was about the schedule might cause you some
10 difficulty. What were you thinking about?

11 THE JUROR: I have a flight Friday at 1,
12 2 o'clock.

13 THE COURT: Flight, that is --

14 THE JUROR: I'm going away for four days.

15 THE COURT: Okay. Vacation?

16 THE JUROR: Yes.

17 THE COURT: Okay. I think that works for me.

18 Is there any question here?

19 MR. PETER McANDREWS: No, Your Honor.

20 MR. SCHUMAN: No.

21 THE COURT: Okay. So I'm going to excuse you
22 because I don't -- while some amount of sacrifice is
23 sometimes necessary, what I take to be a vacation weekend is
24 not included. So I'm going to ask you to take a seat back
25 in the audience, and we'll get someone else to take your

1 place.

2 All right?

3 THE JUROR: Thank you.

4 THE COURT: All right.

5 THE CLERK: Juror Number 38, can you please come
6 forward and take the sixth seat in the first row of the jury
7 box?

8 Number 2?

9 THE COURT: Yeah.

10 THE CLERK: And Juror Number 2, could you please
11 come to side-bar?

12 If you could just stand close to the judge.

13 THE JUROR: Hi.

14 THE COURT: Good morning.

15 THE JUROR: How are you?

16 THE COURT: I'm good. How are you?

17 THE JUROR: I'm good.

18 THE COURT: All right. Not too nervous?

19 THE JUROR: Yeah, it's my first time.

20 THE COURT: It's all right. So you are Juror
21 Number 2?

22 THE JUROR: Mm-hmm.

23 THE JUROR: I think you indicated the schedule
24 might make it difficult for you?

25 THE JUROR: Yeah.

1 THE COURT: Tell me what you have in mind.

2 THE JUROR: I work for the state for the
3 Department of Ag, and with Ag Week this week, and they're
4 low staffed. So there's maybe five of us in the whole
5 building.

6 And then I live about an hour and a half from
7 here and my fiance and I share a care and he needs the car
8 5:00 because his is out of commission.

9 THE COURT: So the first thing, Ag Week.

10 THE JUROR: Yeah.

11 THE COURT: You know, my belie is the State of
12 Delaware should have enough employees so that if an employee
13 is called for juror duty, they do jury duty.

14 THE JUROR: Yeah. It's -- sorry to interrupt.

15 THE COURT: No. No, it's okay.

16 THE JUROR: It's down at the fair, so all of the
17 field people are there. All of the admins, the secretaries
18 stay, and I'm a secretary. So they said go. Well, maybe
19 you won't get picked, and we'll see.

20 THE COURT: Okay. Well, so if you were picked,
21 would that impact your ability to -- I mean, is it going to
22 impact you personally if you're not there for Ag Week?

23 THE JUROR: I don't go to Ag Week. I stay
24 because --

25 THE COURT: You're back in the office?

1 THE JUROR: Yeah, and I was just out sick this
2 past week, so I don't have that much, you know, leeway with
3 being out because I was out this week. I didn't get much
4 done. I had strep throat, and I do have a note for that.

5 THE COURT: I believe you. Where you are,
6 you're not a casual season employee, are you?

7 THE JUROR: No, I'm full time.

8 THE COURT: So I'm pretty sure the State of
9 Delaware accommodates jury service. And so then the other
10 thing was you said you and your fiancé share a car or
11 vehicle, and he needs it at 5 o'clock to go to his work
12 or --

13 THE JUROR: Correct, because I get off at 4:30,
14 and I live about 20 minutes from my work. It kind of works
15 perfect. When I get home, he takes the care.

16 THE COURT: And I take it he has no other way to
17 get to wherever it is that he needs to go?

18 THE JUROR: His truck is in the shop for about a
19 month, and we don't -- we have family that -- we live about
20 half an hour from family, and they work. My dad owns a
21 business, so it's kind of hard for our families to
22 accommodate that.

23 THE COURT: Is the truck that you talked or the
24 vehicle -- so let me ask you this.

25 THE JUROR: Mm-hmm.

1 THE COURT: I'm sorry. You live somewhere near?

2 THE JUROR: In Hartley.

3 THE COURT: Hartley. Okay. I don't think this
4 is going to work. I was going to say if we put you up in a
5 hotel, but the problem is you still have to get here.

6 THE JUROR: Correct.

7 THE COURT: Any questions, Mr. McAndrews?

8 MR. PETER McANDREWS: No.

9 THE COURT: Mr. Schuman?

10 MR. SCHUMAN: No, Your Honor.

11 THE COURT: Okay. Can you just stand over there
12 with my assistant, please?

13 THE JUROR: Yeah, sure.

14 THE COURT: Any comment?

15 MR. PETER McANDREWS: No, Your Honor.

16 MR. SCHUMAN: I think it's a lot of interwoven
17 complicated logistics.

18 THE COURT: So does that mean we probably ought
19 to excuse her?

20 MR. SCHUMAN: I do.

21 THE COURT: Okay. Well, I'm going to excuse
22 her.

23 THE COURT: All right. Bring her back.

24 THE JUROR: Hi.

25 THE COURT: So I am going to excuse you, not

1 really because of the Ag Week, but the logistics of trying
2 to keep everybody with a vehicle.

3 THE JUROR: Yes, very important.

4 THE COURT: It seems kind of difficult, so I'm
5 going to excuse you. Hopefully, because you're young,
6 you'll get called for jury service again.

7 THE JUROR: I'm sure.

8 THE COURT: And maybe it will even be in Dover
9 rather than here.

10 THE JUROR: Right. I hope so.

11 THE COURT: Okay. So if you can go back to the
12 crowd and sit here until we're done here.

13 THE JUROR: Thank you so much. Thank you.

14 THE CLERK: Juror Number 33, can you please come
15 forward and take the second seat in the second row of the
16 jury box?

17 And Juror Number 26, can you please come to
18 side-bar?

19 If you could just go real close to the judge.

20 THE COURT: Hello, sir.

21 THE JUROR: Hi.

22 THE COURT: And you are Juror Number 26; right?

23 THE JUROR: Yes, correct.

24 THE COURT: So I think you answered two
25 questions yes.

1 THE JUROR: Mm-hmm.

2 THE COURT: One of them had to do with the
3 schedule, and one of them was that it might be difficult for
4 you to serve for some other reason. Why don't you tell me
5 first about the schedule.

6 THE JUROR: So for the schedule, I'm sort of
7 pretty much dependent on my travel with contract
8 negotiations. I cancelled my appointment earlier this week,
9 actually tomorrow due to the jury duty and rescheduled it
10 for Friday morning with an anticipation of hopefully being
11 done by Thursday, so I could drive to Boston for an annual
12 contract review Friday morning.

13 THE COURT: But you postponed that once. And if
14 necessary, you could postpone that until next week, too?

15 THE JUROR: Next week I am out of state for two
16 business trips and then leaving on Thursday on vacation out
17 of the country.

18 THE COURT: Okay. So you could postpone it to
19 sometime, but maybe --

20 THE JUROR: It's --

21 THE COURT: -- it would be a little further out.

22 THE JUROR: It's just about the annual -- it's
23 about the timing of the year, the business year. Because in
24 this particular -- in that particular industry, the fiscal
25 year starts, their new fiscal year the beginning of

1 February.

2 THE COURT: Okay.

3 THE JUROR: So we're trying to get a contract in
4 place for their new fiscal year.

5 THE COURT: Okay. And presumably if you were
6 ill or something, the company would figure out a way to do
7 this without you.

8 THE JUROR: My salesperson would still go, but
9 they're not able to speak for the company themselves.

10 THE COURT: Okay. And how long -- and it's Herr
11 Foods?

12 THE JUROR: Herr Foods.

13 THE COURT: How long have you worked for them?

14 THE JUROR: Thirty-one years.

15 THE COURT: Okay. And you're a vice president?

16 THE JUROR: Yes.

17 THE COURT: Does that mean you're in charge of
18 sort of contract negotiations?

19 THE JUROR: Yes, I'm in charge of a third of our
20 business. So we have three different sales channels, and
21 I'm in charge of one of our sales channels that represents
22 about 40 percent of our sales volume and 80 percent of our
23 income.

24 THE COURT: Okay. So if you're not available or
25 if you have to postpone it again, what are the consequences?

1 THE JUROR: It could result negatively with our
2 contract negotiation. My boss is not in tune with the
3 particulars of this account, so -- and the salespeople can't
4 speak to it, so it would have to either be rescheduled, or I
5 don't know. I won't be there, so...

6 THE COURT: Okay. All right. And so if it were
7 the case that that I said, no, I'm not going to excuse you
8 for that reason, and you ended up being picked on the jury,
9 would you be able to give this particular case your full
10 time and attention, and you know, treat it like the most
11 important thing in your life for the week that it lasts?

12 THE JUROR: Well, for next week, I mean, I would
13 not be able to. I'm going out of the country for vacation,
14 so that would be a financial hardship there.

15 THE COURT: Well, right.

16 THE JUROR: For this week --

17 THE COURT: Next week you said you were going on
18 vacation. Thursday, right?

19 THE JUROR: Right.

20 THE COURT: There's no way we would be doing
21 anything. And if we have a blizzard, in that case, we'll
22 have other problems.

23 THE COURT: All right. So what was the other
24 thing you wanted to bring to my attention?

25 THE JUROR: So I have had a severe sinus

1 infection, and I've been on two rounds ever antibiotics, and
2 my left ear, it's like I'm under water all the time. And
3 I'm still -- they can't give me anymore antibiotics because
4 they said two series, or cycles, or whatever they call it of
5 the antibiotics, they can't go beyond that. And so I'm on
6 sinus decongestants, Sinutab, some other kind of
7 decongestant.

8 THE COURT: Something to decongest you?

9 THE JUROR: Yeah. My left ear, it's like it
10 continually pops, and it's like I'm under water all the time
11 on my left side. My right side is okay.

12 THE COURT: So does this mean you have trouble
13 hearing?

14 THE JUROR: Yeah. It's always popping at all
15 times. It's like I'm always under water.

16 THE COURT: But the hearing problem is not
17 something that has prevented you from doing your work, or I
18 mean, I guess what I'm wondering is: Do you think it would
19 impact your ability to be a juror in this case?

20 THE JUROR: It's hard to -- it's hard to follow
21 things. Yeah, so it's like I'm having to really pay
22 attention. Yeah.

23 THE COURT: Of course, paying attention is a
24 good thing.

25 THE JUROR: I get it.

1 THE COURT: I mean, so you know yourself best.
2 This is really -- we're entirely dependent on you for this.
3 I mean, if you were the lawyers here trying to pick jurors
4 who thought they would be fair and impartial and give it a
5 good effort, would this hearing issue relating to your
6 infection, would that be something that would cause you not
7 to want to have you on the jury?

8 THE JUROR: Well, that would be something the
9 lawyers would have to answer, but there is definitely
10 impairment on my left ear, and I struggle with it at times.

11 THE COURT: Okay. Any questions, Mr. McAndrews?

12 MR. PETER McANDREWS: No, Your Honor.

13 THE COURT: Mr. Schuman?

14 MR. SCHUMAN: No, Your Honor.

15 THE COURT: All right. Sir, can you go over
16 there with my staff?

17 THE JUROR: Okay.

18 THE COURT: What do you think?

19 MR. PETER McANDREWS: It does sound like the ear
20 could be a problem. There's a lot of terminology used and
21 potentially there's people that aren't speaking loudly
22 enough. I do have some concern for grasping --

23 THE COURT: Okay. I've got that. What do you
24 think?

25 MR. SCHUMAN: I think let him go.

1 THE COURT: Okay. All right.

2 Sir, I'm going to excuse you from being on any
3 further service, but I do ask that you go and sit back in
4 the audience and good luck with your infection. Two rounds
5 of antibiotics, I've read about that. So good luck.

6 THE JUROR: Okay.

7 THE COURT: Thank you.

8 THE CLERK: Juror Number 35, can you please come
9 to side-bar?

10 If you could get close to the judge.

11 THE COURT: Good morning.

12 THE JUROR: Good morning.

13 THE COURT: So you are Juror Number 35?

14 THE JUROR: Mm-hmm.

15 THE COURT: And you indicated that you have some
16 experience with the design, manufacture or repair of
17 electronic communications equipment.

18 THE JUROR: Repair.

19 THE COURT: Repair. Okay. Tell me about it.

20 THE JUROR: I take care of IT stuff at work.

21 THE COURT: Okay. What is your work?

22 THE JUROR: EDIS.

23 THE COURT: Okay. That's a construction
24 company?

25 THE JUROR: Mm-hmm.

1 THE COURT: And so I'm going to let the lawyers
2 ask any follow-up questions which are better placed to do it
3 in relation to this case.

4 Mr. McAndrews, is there anything you want to
5 ask?

6 MR. PETER McANDREWS: Sure. Does any of your
7 work involve DSL equipment?

8 THE JUROR: Uh-huh.

9 MR. PETER McANDREWS: It does?

10 THE JUROR: Yes.

11 MR. PETER McANDREWS: And do you know who are
12 the manufacturers of those parts? I assume they're not one
13 of the parties because you didn't raise your hand.

14 THE JUROR: No, it's not.

15 THE COURT: And so do you understand DSL
16 technology?

17 THE JUROR: Mm-hmm.

18 THE COURT: All right. Mr. Schuman, any
19 questions from you?

20 MR. SCHUMAN: I have no follow-up questions,
21 Your Honor.

22 THE COURT: So how long have you kind of
23 understood DSL technology?

24 THE JUROR: It's kind of been a work in
25 progress, like jumped in and, you know, can you help me do

1 this, and you know, just like build up from there. So it's
2 like -- not like a formal training kind of thing, but --

3 THE COURT: So I think a lot of this trial is
4 going to concentrate on a chip. It has something to do with
5 how this technology works.

6 THE JUROR: Okay. No. I'm more of the wire
7 side of it.

8 THE COURT: Okay. So if this case is about what
9 the chip does or doesn't do, are you going to bring any
10 special knowledge to --

11 THE JUROR: No. No.

12 THE COURT: Okay. And do you think you'd be
13 able to evaluate whatever the evidence is just fairly and
14 impartially like anybody else?

15 THE JUROR: Of course.

16 THE COURT: Okay. Are there any or anymore
17 questions?

18 MR. PETER McANDREWS: No.

19 MR. SCHUMAN: No, Your Honor.

20 THE COURT: Can you just go over there with
21 my --

22 MR. SCHUMAN: Somebody needed a glass of water.

23 THE COURT: Just go over there to my assistant
24 for a minute.

25 THE JUROR: Mm-hmm.

1 THE COURT: She seems fine to me. Do you have
2 any objection?

3 MR. PETER McANDREWS: Seems okay to me, Your
4 Honor.

5 MR. SCHUMAN: We don't.

6 THE COURT: Okay. All right.

7 All right. Ma'am, if you can go take the seat
8 that my assistant will direct you to in the jury box. Okay?

9 THE JUROR: Okay. Yes.

10 THE CLERK: And Juror Number 39, if you could
11 come to side-bar.

12 THE COURT: Good morning. So you are Juror
13 Number 39?

14 A JUROR: Yes, that's correct.

15 THE COURT: All right. And do I take it that
16 you are deaf?

17 A JUROR: Yes, that's correct.

18 THE COURT: And do you read lips or just sign
19 language?

20 A JUROR: I do both. Signing is my first
21 language and then I read lips to help me along.

22 THE COURT: And so the question that you
23 answered had to do with 21 about poor vision, difficulty
24 hearing, difficulty understanding spoken written English.
25 Is there anything besides the hearing that you were thinking

1 about when you answered that question?

2 A JUROR: Just my being deaf, that's all.

3 THE COURT: The work of the sign language
4 interpreter here, are you understanding so far everything
5 that's going on?

6 A JUROR: Yes. Yes, I am.

7 THE COURT: Do you have any concerns yourself
8 about your ability to serve as a juror in this case?

9 A JUROR: No. I'm just concerned as to whether
10 or not you would be able to provide interpreters for the
11 entire week. That would be my only concern.

12 THE COURT: If you're selected as a juror, we
13 will provide interpreters for the entire week, and I believe
14 -- I believe from the reading that I have done that we
15 actually would be providing two interpreters, because I
16 think that it's hard work being an interpreter, and one
17 needs to have switching on and off.

18 A JUROR: That's correct as well.

19 THE COURT: Okay. So I'm going to give the
20 lawyers a chance to ask any questions they want to ask.

21 Mr. McAndrews, any questions?

22 MR. McANDREWS: The only question I would have
23 is for, it's really more for the interpreter, it's about
24 sign language for highly technical terms. Is there any
25 trouble with that typically?

1 THE INTERPRETER: There isn't a problem.
2 Anything that doesn't have a sign we will finger spell to
3 the juror, and he will have the same information that every
4 other jurors has. And if you refer to something, specific
5 terminology for a specific terminology, that word will be
6 finger spelled to him and he will have access to that
7 terminology just like every other juror.

8 MR. McANDREWS: And if you don't have the
9 spelling, we could provide it.

10 THE INTERPRETER: Thank you.

11 THE COURT: So that's all you want to ask?
12 Mr. Schuman?

13 MR. SCHUMAN: I don't have any follow-up to
14 that, Your Honor, no. Nothing further.

15 THE COURT: Okay. Do you have any questions?

16 A JUROR: No.

17 THE COURT: Okay. Why don't you go over there
18 with my assistant.

19 A JUROR: Sure.

20 (Juror left sidebar.)

21 THE COURT: So I don't think there is any basis
22 to strike him. It may require a little more effort on all
23 of our parts to not speak too fast. I forget who has, maybe
24 it is Dr. Cooklev, I can't remember, somebody in this group
25 is a fast talker and I assume particularly with technical

1 topics and having to finger spell that there might be an
2 outside limit. But in terms of qualified to serve, is there
3 any objection by either of you?

4 MR. McANDREWS: No, Your Honor.

5 MR. SCHUMAN: No, Your Honor.

6 THE COURT: Okay.

7 (Juror returned to sidebar.)

8 THE COURT: All right, sir. I'm going to ask
9 you to retake your seat in the jury box. One thing I would
10 say is if you are -- if you do serve on the jury and you
11 have any difficulties or the interpreter has any
12 difficulties because people are talking too fast, you have
13 to make sure that we're aware of that, because we will do
14 whatever is necessary to put you in the same position as
15 everyone else in terms of understanding. Okay?

16 A JUROR: Okay. That's fine.

17 THE COURT: All right. Can you retake your
18 seat.

19 A JUROR: Thank you.

20 (Juror leaving sidebar.)

21 MR. McANDREWS: Your Honor, I apologize, I may
22 have actually raised this before. I assume that the
23 interpreters will have to accompany him into the
24 deliberation room at the close of trial.

25 THE COURT: That's true. And when the

1 interpreters do that, they don't participate. They're not
2 -- they don't become jurors, they just translate for him.

3 MR. McANDREWS: I assumed you had a protocol for
4 that; correct?

5 THE COURT: Yes. I was given something which we
6 can go over more, because I was curious about that question
7 myself. And so there are various suggestions for charging
8 the jury about what the interpreter's role is, perhaps
9 administering an oath to the interpreter at some point. --
10 I thought there was something in here there is a code of
11 professional conduct I think for interpreters. And it says
12 here the interpreter's -- this is I think an instruction to
13 give in connection with the final instruction, interpreter's
14 sole function is to make possible full communication between
15 the deaf and hard of hearing jurors and the other jurors.
16 The hearing juror should talk directly to the deaf or hard
17 of hearing juror as if no interpreter were present.

18 We can solve any problems that come up.

19 MR. McANDREWS: Okay.

20 THE COURT: Okay. Are we ready to pass the
21 chart back and forth? So why don't you retake your seat.

22 MR. McANDREWS: Your Honor, we do have one
23 thing. One of the jurors that was seated actually
24 apparently works for Morris James.

25 MR. SCHUMAN: I was going to raise the same

1 issue.

2 THE COURT: Which one is that?

3 MR. McANDREWS: Number 25.

4 MR. SCHUMAN: 25.

5 THE COURT: Well, shall we bring that person
6 over here? Is there anything in particular you want to ask?
7 Obviously I understand Morris James represents ADTRAN and
8 Zytech; correct?

9 MR. McANDREWS: Right, it would be for cause.
10 We would argue it for cause.

11 THE COURT: Do you agree with that?

12 MR. SCHUMAN: I would like to ask her if she
13 knows anything about the case.

14 THE COURT: Okay. All right.

15 COURT CLERK: Juror Number 25, can you please
16 come to side-bar.

17 THE COURT: Hi, ma'am.

18 A JUROR: Hi, Your Honor.

19 THE COURT: So you are Juror Number 25, I
20 believe?

21 A JUROR: Yes.

22 THE COURT: One of the things on the
23 questionnaire, whatever, you indicated you work for Morris
24 James which of course is a well-known law firm here in town.

25 A JUROR: Yes.

1 THE COURT: What exactly do you do for them, and
2 in kind of which section of the firm?

3 A JUROR: I'm definitely -- I'm not in the
4 corporate office. I'm in the personal injury group on North
5 Broom Street and I'm an administrative assistant, so I do
6 receptionist and assist the paralegals.

7 THE COURT: And so Morris James has the personal
8 injury group physically separate from the downtown?

9 A JUROR: Correct, we have a separate office on
10 North Broom Street.

11 THE COURT: And so do you know anything about
12 what Morris, James does other than at the highest possible
13 level other than what you personally do in the personal
14 injury section?

15 A JUROR: Well, I know we do have attorneys that
16 do patents. I know that Richard Herrmann just retired, I
17 have only been there a few months, intellectual property
18 there are other attorneys and patent attorneys in the 500
19 Delaware Avenue building, yes, so I am aware of that.

20 THE COURT: Okay. But you yourself have
21 essentially zero experience with patent litigation?

22 A JUROR: Correct.

23 THE COURT: And also with the attorneys in the
24 corporate office who do patent litigation?

25 A JUROR: Right. The only one that I had met

1 when I was in law school in my last class this past
2 semester, I had met -- Richard Herrmann came in, he did a
3 speech. I know he worked for Morris James and just retired.
4 But I don't know, like any knowledge of how the litigation
5 process works in the patent.

6 THE COURT: Okay. Mr. McAndrews, do you want to
7 ask any questions?

8 MR. McANDREWS: I just -- I think you said that
9 you have only been there for a couple of months now?

10 A JUROR: I was hired in August was my first law
11 firm job.

12 MR. McANDREWS: So you're just getting to know
13 the firm?

14 A JUROR: Correct.

15 MR. McANDREWS: Okay.

16 THE COURT: All right. Mr. Schuman.

17 MR. SCHUMAN: Can we ask about a particular
18 name, Your Honor, individual?

19 THE COURT: Sure.

20 MR. SCHUMAN: Do you know Mr. Ken Dorsney?

21 A JUROR: The name sounds familiar, but honestly
22 I do not know him.

23 THE COURT: Can you go stand over there with my
24 staff?

25 A JUROR: Yes.

1 (Juror left sidebar.)

2 THE COURT: And what do you think?

3 MR. SCHUMAN: I don't think I should strike for
4 cause.

5 THE COURT: You say you don't strike her for
6 cause?

7 MR. SCHUMAN: I do not.

8 THE COURT: I take it you're fine.

9 MR. McANDREWS: I think we should strike.

10 THE COURT: I'm getting my sides mixed up here.

11 MR. McANDREWS: Yes, Your Honor, I think she
12 should be stricken for cause. The fact that she doesn't Ken
13 Dorsney or the other office and the fear that she would feel
14 some pressure later on to fear for her job even if she were
15 to rule in favor of arguments adverse to a firm client, I
16 don't want to speak to any ethical obligation of an
17 administrative assistant, maybe there is not one, but
18 something along those lines does give us significant
19 concern.

20 THE COURT: So here is what I think. I think
21 the record is pretty clear right now she doesn't know
22 anything that would impact her ability to be a fair and
23 impartial juror, but I also think that she does work for the
24 law firm that's representing one of the other defendants and
25 she's not a lawyer, but I just think it's risky to have a

1 person who is employed by a central opposing party. I don't
2 think she would do anything during the week to disqualify
3 her, but think that -- I just think it's not a good idea.

4 So it may be that I'm being overly concerned
5 here, but I really think she ought to be stricken for cause.
6 So I'm going to strike her. Okay?

7 MR. McANDREWS: Thank you, Your Honor.

8 (Juror at sidebar.)

9 THE COURT: So, ma'am, I'm going to actually
10 excuse you from service. I understand you don't know this,
11 but Mr. Dorsney actually represents somebody else who is
12 opposed to one of the parties here.

13 A JUROR: Okay.

14 THE COURT: And I just think that though you
15 don't know that and probably wouldn't learn it in the next
16 week, it just doesn't look good to have somebody that works
17 for a law firm that is one of the parties.

18 Don't tell anybody in the jury back there, I
19 would like you to go at this time back there, don't talk to
20 anyone about what we talked about.

21 A JUROR: Just sit back in my seat in the juror
22 box?

23 THE COURT: No, back in the crowd.

24 A JUROR: Oh, absolutely. Thank you very much.

25 THE COURT: Have a nice day.

1 A JUROR: Thank you, Your Honor.

2 THE COURT: All right. Let's get a replacement.

3 COURT CLERK: Juror Number 40, will you please
4 come forward and take the fifth seat in the second row of
5 the jury box.

6 THE COURT: All right. Are we good now?

7 MR. SCHUMAN: Yes, Your Honor.

8 THE COURT: Okay. Let's go back and finish the
9 jury selection.

10 (End of side-bar discussion.)

11 THE COURT: All right. So just everyone knows
12 what's going on here is we have fourteen jurors sitting here
13 who are qualified for service. In fact, the jury is only
14 going to be eight people. And so there is a process where
15 the lawyers get to for lack of a better word whittle the
16 fourteen of you down to eight. So unless something goes
17 terribly wrong, the group that's out there in the crowd,
18 you're not going to be serving on this jury. But I can't
19 let you go until we actually get down to the eight and get
20 them sworn. So this process is done basically passing a
21 chart back and forth. So we're going to be sort of quiet
22 for however long this takes.

23 (Discussion off the record.)

24 COURT CLERK: Okay. When I call your number, it
25 means you're free to leave the jury box. Juror Number 6,

1 you are free to go.

2 Juror Number 23, you're free to go.

3 Juror Number 34, you are also good to go.

4 Juror Number 7, you're free to leave.

5 Juror Number 33, you're good to go.

6 And Juror Number 39, you're free to go.

7 Once everyone gets out of the box, I'll reseat
8 you guys up there.

9 Okay. So the first row you guys are all going
10 to shift down, so number 28, now you're going to be in seat
11 number 1. And then you guys on the second row, just all
12 shift down so you're in the first four seats up there.

13 THE COURT: All right. Can we administer an
14 oath to the panel?

15 COURT CLERK: Members of the jury panel, will
16 you please rise and raise your right hand. You and each of
17 you do solemnly swear, those of you who swear, and those and
18 each you do affirm, those of you who affirm, that you will
19 well and truly try the issue joint wherein TQ Delta LLC is
20 the plaintiff and 2Wire, Inc. is the defendant, and you will
21 a true verdict render according to the evidence so help you
22 God, those of you who swear, and you do so affirm, those of
23 you who affirm.

24 The correct response is I do.

25 THE JURY: I do.

1 THE COURT: All right. So members of the jury,
2 if you will sit down. Everybody else, you are done for the
3 day. Thank you for being here. Though it may not be
4 obvious, we need to have enough jurors to make sure that we
5 can get a jury out of the people who are here. We had a few
6 more than we needed today, but we do appreciate your service
7 and it's necessary for the system to work. So thank you and
8 you are excused.

9 (Jury panel leaving the courtroom.)

10 THE COURT: So members of the jury, I'm going to
11 read you one of the preliminary instructions that I have,
12 and then we're going to take a break so that you can let
13 anyone you need to let know that you're going to be here for
14 a few days. You can make that phone call. Normally if this
15 were a normal trial morning, we wouldn't be taking a break
16 quite this early. So I do want to say to you a few words
17 about your conduct as jurors.

18 First, I instruct you that during the trial
19 until you have heard all the evidence and retired to the
20 jury room to deliberate, you are not to discuss the case
21 with anyone, not even amongst yourselves. If anyone should
22 try to talk to you about the case, including a fellow juror,
23 bring it to my attention promptly. There are good reasons
24 for this ban on discussions, the most important being the
25 need for you to keep an open mind throughout the

1 presentation of evidence.

2 Many of you use cell phones, smart phones and
3 other electronic devices and computers to access the
4 internet and communicate with others. You must not talk to
5 anyone about this case through any of those means. You also
6 must not talk the old fashioned way of just talking, that
7 includes your family and friends. You must not communicate
8 orally with anyone about the case on any kind of electronic
9 device or through e-mail, text messaging, Twitter, Snap
10 Chat, internet chat rooms, blogs, social networking sites
11 such as Facebook. You may not use any similar technology or
12 social media to either get or share information about this
13 case, even if I've not specifically mentioned it here.

14 The lawyers, the parties, and the witnesses are
15 not supposed to talk to you outside the testimony and
16 arguments that are presented in the courtroom. If any
17 lawyer, or party, or witness does not speak to you when you
18 pass in the hall, ride in the elevator, or the like, it is
19 because they are not supposed to talk with you, not because
20 they are rude. That is why you are asked to wear your juror
21 tags. It shows that you are someone who is not to be
22 approached in any way.

23 Second, do not read or listen to anything
24 related to the case that is not admitted into evidence. By
25 that, I mean if there's some sort of media coverage which

1 seems unlikely, do not read the article, or watch, or listen
2 to the report.

3 In addition, do not try to do any independent
4 research or investigation in any matter related to the case
5 or this type of case. Do not do any research on the
6 Internet, for example, about DSL technology. You are to
7 decide the case solely upon the evidence presented at trial.

8 You should not consult dictionaries or reference
9 materials such as the Internet or any other electronic
10 sources to obtain information about this case or to help you
11 decide the case. Do not try to find out any information
12 from any source outside what you hear in the courtroom. Do
13 not reach any conclusion as to the claims or defenses until
14 all the evidence is in. Keep an open mind until you start
15 deliberations at the end of the case.

16 During the trial, it may be necessary for me to
17 talk to the lawyers out of your hearing by having a side-bar
18 which is when we meet over there to my right. If that
19 happens, please be patient. We're not trying to keep
20 important information from you. The side-bars are necessary
21 for me to fulfill my responsibility which is to be sure that
22 evidence that is presented to you is presented correctly
23 under the law.

24 We will, of course, do what we can to keep the
25 number and length of these side-bars to a minimum. While we

1 meet, you may stand up and stretch, take a short break. And
2 if it's a lengthy issue, it's possible that I might call a
3 recess, though I hope not to.

4 I also may not always grant the attorney's
5 request for a side-bar. Do not consider my granting or
6 denying a request for side-bar as any indication of my
7 opinion of the case or what your verdict should be.

8 Only the lawyers and I are allowed to ask
9 questions of the witnesses. You are not permitted, however,
10 to ask questions of witnesses.

11 If you wish, you may take notes during the
12 presentation of evidence, the submission or arguments of
13 attorneys at the end of the case and during my instructions
14 to you on the law. You will get my instructions in writing
15 at the end of the case. My courtroom deputy will arrange
16 for pens, papers, and pencils.

17 Any notes you take are for your own personal
18 use, and they are not to be given or read by anyone else.
19 We also have, as you see, not one, but two court reporters,
20 a woman and the man seated kind of in between us. And they
21 will be transcribing the testimony during the course of the
22 trial, but you should not assume that transcripts will be
23 available for your review during your deliberations nor
24 should you consider the notes that you or your fellow jurors
25 may take as a kind of written transcript. Instead, you

1 listen to the testimony, keep in mind that you're relying on
2 your memory of that testimony during your deliberations.

3 Here is a little bit more about note taking.
4 It's permitted. It's not required. Each of you may take
5 notes, but no one is required to.

6 And the second thing is do not take your notes
7 away from court. If you do take notes, take them with you
8 each time you leave the courtroom and leave them in the jury
9 room when you leave at night. At the conclusion of the
10 case, after you've used your notes in deliberations, the
11 Court officer will collect and destroy them to protect the
12 secrecy of deliberations.

13 All right. So we're going to take that break I
14 promised you. When we come back, I will finish reading
15 these preliminary jury instructions, and we'll also see a
16 little background video on the patent system, and then we'll
17 move to the opening statements of the lawyers.

18 All right. And so this break is designed to be
19 15 minutes, but if it takes you more time to notify who you
20 need to notify, we'll wait until you've done that.

21 All right. Can we take the jury out, please?

22 (Jury leaving the courtroom at 10:50 a.m.)

23 THE COURT: All right. So we're going to
24 take -- sit down. We're going to take our break in just a
25 second.

1 I will tell you that I read the disputed
2 sections of Dr. Yu's testimony, and my ruling is that on the
3 first four sections which are on Pages 424 through 426, the
4 objection is that expert testimony is overruled. I think
5 that he's testifying about personal knowledge which he has
6 in his position, and so I'm going to allow that.

7 The fifth objection on Page 427 which is to
8 essentially one question, I'm going to sustain that because
9 it's leading, and it was objected to as leading at the time.
10 It's a leading question. So that part is going to be struck
11 or not permitted.

12 On the two little sections on Page 435, I'm
13 going to overrule the Rule 702 objections because, again, I
14 think it's based on personal knowledge. And I'm also going
15 to overrule the relevance and Rule 403 objections because I
16 don't really see any prejudicial value -- any risk of
17 prejudice or unfair prejudice, so I'm going to permit that.

18 All right. So we'll take a recess for
19 15 minutes or until the jury is ready, whichever comes
20 first.

21 DEPUTY CLERK: All rise.

22 (Recess was taken.)

23 THE COURT: We'll get the jury in just one
24 second. It did occur to me, I was looking over the weekend,
25 I noticed as far as I can tell the claim construction order

1 in the case which is Docket Item 492 has a bunch of
2 constructions for patents that are not at issue in this
3 case. And I'm just wondering if someone, whoever prepared
4 Docket Item 492 could revise it so we'll have something that
5 just has the construction, what I call 1, 2 and 5 in that
6 order so we give the jury a clean claim construction order.

7 And the second thing is, I'm hoping that by some
8 time tomorrow evening you all will submit your final and
9 best effort at joint final jury instructions.

10 MR. McANDREWS: Yes, Your Honor.

11 THE COURT: Let's get the jury. And you're
12 ready to play the video? Okay. As long as somebody is
13 ready to play it.

14 (Jury entering the courtroom at 11:12 a.m.)

15 THE COURT: You can sit down as soon as you come
16 in. And everyone else should be seated. So they stand up
17 out of respect for your function. That's not to say what
18 they're doing is not important, too, but you don't need to
19 stand up out of respect for it.

20 So members of the jury, you have been sworn, and
21 I am following preliminary jury instructions for your
22 guidance in the nature of the case and in your roles as
23 jurors. You will hear evidence to decide what the facts are
24 and then apply those facts to the law as I give you. You
25 and only you will be the judges of the facts. You will have

1 to decide what happened. I play no part in judging the
2 facts. You should not take anything I may say or do during
3 the trial as indicating what I think of the evidence or what
4 your verdict should be. My role is to be the judge of the
5 law. I make whatever legal decisions have to be made during
6 the course of the trial. And I'll explain to you the legal
7 principles that must guide you in your decision. You must
8 follow the law as I give you whether you agree with it or
9 not.

10 So as I mentioned before, this is a patent case
11 relating to Digital Subscriber Line or DSL technology. DSL
12 technology allows existing telephone lines to be used for
13 high speed data communication including broadband access to
14 the internet. During the trial the parties will offer
15 testimony to familiarize you with this technology.

16 TQ Delta is the owner of a patent which is
17 identified as the Patent Office as number 7,453,881, which
18 everyone is going to call the '881 patent. 2Wire, the
19 defendant is, accused of infringing the '881 patent.

20 So patents are granted by the United States
21 Patent and Trademark Office. The patent gives the owner the
22 right to exclude others from making, using, offering to sell
23 or selling the claimed invention within the United States or
24 importing it into the United States. So what's called the
25 administrative office of the courts has prepared a

1 twenty-minute video to give you background on the patent
2 system since that's not familiar to most people. And there
3 may be some things that they will say in this video that
4 aren't relevant to this particular case, but it's just to
5 give you a general appreciation of sort of the background.

6 So if we could play the video, please. And if
7 we could dim the lights a little bit.

8 (Patent video played as follows:)

9 JUDGE FOGEL: Hello. I'm Jeremy Fogel. I've
10 been a United States District Judge since 1998, and I'm now
11 the Director of the Federal Judicial Center.

12 As you probably know by now, this is a patent
13 case, so you may be wondering, how can I sit in judgment on
14 a case like this when I'm not entirely sure what a patent
15 is? We hope to answer that concern with this brief video,
16 which will give you some of the background needed to do your
17 job.

18 This case will involve some special issues that
19 the Judge and lawyers will explain to you, but all patent
20 cases involve some basics that you will learn about.

21 This video will discuss what patents are, why we
22 have them, how people get them, and why there are disputes
23 that require us to call in a jury like you. We'll also show
24 you what patents look like.

25 The United States Constitution gives Congress

1 the power to pass laws relating to patents. Article 1,
2 Section 8, Clause 8 allows Congress to promote the progress
3 of science and useful arts by securing for limited times to
4 authors and inventors the exclusive right to their
5 respective writings and discoveries.

6 A patent, then, is an official grant by the
7 United States Government that gives its owners certain
8 rights to an invention. Those include the right to stop
9 others from making, using, selling, or offering for sale the
10 invention that is claimed in the patent.

11 A patent lasts for a specific period of time,
12 usually 20 years from the date that the application is filed
13 by the inventor. But because it takes an average of three
14 years for the Patent and Trademark Office to act on the
15 application, the effective life of a patent is closer to
16 17 years.

17 A patent represents a bargain made between the
18 government and the inventor. In return for the right to
19 prevent others from using the invention, the inventor must
20 enhance the public knowledge, or what we sometimes call the
21 state of the art, by adding something new and useful to it.

22 A famous example is Thomas Edison's invention of
23 a light bulb. Harnessing electrical power for illumination
24 transformed society and led to many other important
25 break-throughs. During the lifetime of the patent, its

1 disclosure may inspire new inventions, and after it expires,
2 the invention is free for anyone to use. It is this
3 combination of something new and valuable to the public that
4 justifies granting time-limited patent protection to the
5 inventor.

6 A patent is in many ways like a deed to a piece
7 of property. It grants the owner the right to keep people
8 off the property or to charge them a fee, like rent, for
9 using it. And just as a deed indicates boundaries defining
10 the landowner's property, a patent claim defines the
11 patentee's domain.

12 The patent system works because the inventor is
13 required to describe the invention in clear and specific
14 terms so that the public knows what the boundaries of the
15 invention are. Once a patent is issued by the government,
16 it becomes available for public inspection. And that way,
17 anyone who learns of a patent can read it and understand
18 exactly what the inventor invented and the limits of the
19 patent set forth in the claims.

20 Now that we understand what a patent is, let's
21 take a closer look at term "invention." An invention is a
22 new way of solving a problem for a useful new machine,
23 manufacture, or composition of matter.

24 The patent process begins in the mind of the
25 inventor and, in particular, when the invention is

1 formulated in the mind of the inventor. Patent lawyers call
2 this "conception." This is when the idea occurs to the
3 inventor clearly enough that he or she can write it down and
4 explain it to someone.

5 To qualify for a patent, the invention needs to
6 be new and useful. Also, it must not be obvious to one of
7 ordinary skill in the field. If the inventor believes these
8 requirements are met, he or she will prepare an application
9 for filing with the Patent and Trademark Office, whose
10 headquarters are in Alexandria, Virginia, just outside of
11 Washington, D.C.

12 The Patent and Trademark Office, often called
13 the PTO, is the agency of the federal government whose job
14 it is to examine patent applications to make sure they were
15 in proper form and comply with the requirements of the law.

16 The inventor can prepare an application for
17 filing with the PTO, but usually it is drafted by a patent
18 attorney or a patent agent who specializes in what is called
19 prosecuting patent applications. That is, the process by
20 which they are evaluated.

21 The attorney or agent works with the inventor to
22 be sure the invention is described and claimed in a way that
23 complies with the law and the regulations of the PTO.
24 Ninety-eight percent of patent applications are made online
25 using the PTO's electronic filing system, although a few

1 paper applications are still made.

2 When the PTO receives the inventor's
3 application, it is first checked to see if it is complete
4 and complies with all the PTO's application requirements.
5 It then assigns the submission to a Patent Examiner, a staff
6 person with a background in the field or art the invention
7 falls within to evaluate the application and decide whether
8 a patent can be granted.

9 You've been given a sample patent to refer to as
10 you watch this video, so you already have a sense of what a
11 patent looks like, but now let's take a closer look at the
12 three main parts of a patent.

13 To begin with, there are some basic identifying
14 information on the first page. This material is highlighted
15 in your handout. On the upper right side of the page is the
16 number assigned to the patent by the PTO and on the left
17 side is a title that describes the invention and the names
18 of the inventors and sometimes the company to whom they've
19 assigned the patent. Also on the left is the date when the
20 patent application was filed, and back on the right, the
21 date when the patent was issued.

22 There also is more detailed information on the
23 first page, including a list of numbers following the
24 caption "Field of Search." These numbers identify
25 previously issued patents the Examiner looked at or searched

1 to make sure the applicant's claimed invention really is
2 something new, not obvious, and thus patentable.

3 Also listed on the first page is what we call
4 references. That is, previous patents or articles that
5 describe the technology or prior art known at the time the
6 application was filed. It may seem strange to you that we
7 call this pre-existing technology prior art even though it
8 has nothing to do with artists.

9 We use the word "art" in its historical sense to
10 include inventions and other subject matter reasonably
11 related to the claimed invention. We also refer to the
12 latest technology as state of the art, and we say of someone
13 who can understand and apply the technology that he or she
14 is skilled in the art.

15 The second major part of the patent is what we
16 call the specification or written description. As is the
17 case in your sample, it is usually the longest part of the
18 patent. It includes an abstract, which is a brief summary
19 of the invention. A background section describes the nature
20 of the problem the invention is supposed to solve. One or
21 more drawings, called figures, that illustrate various
22 aspects of the application, and a detailed description of
23 one or more embodiments of the invention.

24 An embodiment is a specific device or method
25 that uses the invention, such as a particular form of light

1 bulb.

2 The third and most important part of the patent
3 is the claims. These are the numbered paragraphs that
4 appear at the end. The claims are what give the public
5 notice of the boundaries of the invention. They're similar
6 to the description of property you may have seen in a deed,
7 referring to precise measurements taken on the ground.

8 The Judge will instruct you further on how any
9 technical or ambiguous terms in the patent claims should be
10 understood.

11 Now that we've discussed the main parts of a
12 patent, let's look at how the PTO processes patent
13 applications, what we referred to earlier as prosecution of
14 the patent application. This process begins when the
15 inventor's application arrives at the PTO. There, it
16 receives a filing date. Under the American Invents Act of
17 2011, filing dates will determine who is awarded the patent
18 if there are competing valid applications.

19 In 2012, the PTO received nearly 600,000 patent
20 applications and issued more than 270,000 patents.

21 After determining that the application is
22 complete, the receiving branch also decides what field of
23 technology an application relates to and assigns it to the
24 appropriate examining group. In order to make that
25 decision, the Patent Examiner usually looks at patents that

1 have been issued previously in the same or closely related
2 fields of art. The Examiner has computer databases that
3 contain information used to accomplish this task.

4 Another part of the job is to decide if the
5 inventor's description of the invention is complete and
6 clear enough to meet the requirements for a patent,
7 including the requirement that the description enables
8 someone of ordinary skill in the field to actually make and
9 use it.

10 However, because the job of examining so many
11 applications is challenging, the law requires the applicant
12 to tell the Examiner whatever he or she knows about the
13 prior art that might be important to the Examiner's decision
14 on whether to allow the patent. We call this the
15 applicant's duty of candor.

16 One way the applicant can satisfy this duty is
17 by bringing pertinent prior art to the attention of the
18 Examiner, either in the original application, or in other
19 submissions called Information Disclosure Statements. In
20 this way, the decisions of the Examiner are based on both
21 the information provided by the applicant and on the
22 information the Examiner finds during his or her prior art
23 search.

24 Sometimes the Examiner concludes that the
25 application meets all the requirements we've discussed and

1 allows the patent to issue at this first stage, but more
2 frequently the Examiner will reject the application as
3 deficient in some respect. This decision will be
4 communicated by the Examiner in what is called an Office
5 Action, which is a preliminary notice to the applicant of
6 what the Examiner finds insufficient or unpatentable. For
7 example, the Examiner may reject certain claims as being
8 unpatentable because a journal article written and published
9 by another person prior to the effective filing date of the
10 patent application disclosed what the applicant was
11 currently claiming. At that point, the applicant prepares a
12 written response, either agreeing or disagreeing with the
13 Examiner.

14 An applicant who agrees with the Examiner can
15 suggest amendments to the application designed to overcome
16 the Examiner's rejection. Alternatively, an applicant who
17 disagrees with the Examiner's Office Action can explain the
18 reasons for the disagreement.

19 This exchange of Office Actions and responses
20 goes on until the Examiner issues a Final Office Action,
21 which may reject or allow some or all of the applicant's
22 claims. The overall process is referred to as the
23 prosecution history of the application.

24 The written incoming and outgoing correspondence
25 between the PTO Examiner and the applicant is also called

1 the file wrapper. In the past, these file wrappers were all
2 in paper form as were the submitted applications. Now they
3 are most often electronic and may occasionally be paper as
4 well.

5 Most patent applications filed on or after
6 November 29th, 2000 are published by the PTO eighteen months
7 after the inventor has filed his or her application so that
8 the public may inspect it.

9 Once a final PTO Office Action has occurred and
10 one or more claims have been allowed, the applicant is
11 required to pay an issuance fee and the patent is printed.
12 Then, on the date shown on the upper right-hand corner, the
13 first page of the patent, it is issued by the PTO and the
14 inventor receives all the rights of the patent. That date
15 is highlighted on your sample.

16 Once a patent has issued, the inventor or the
17 person or company the inventor has assigned a patent to can
18 enforce the patent against anyone who uses the invention
19 without permission. We call such unlawful use infringement,
20 but the PTO and its Examiners have no jurisdiction over
21 questions relating to infringement of patents. If there is
22 a dispute about infringement, it is brought to the Court to
23 decide.

24 Sometimes in a court case you are also asked to
25 decide about validity. That is whether the patent should

1 have been allowed at all by the PTO. A party accused of
2 infringement is entitled to challenge whether the asserted
3 patent claims are sufficiently new or nonobvious in light of
4 the prior art or whether other requirements of patentability
5 have been met. In other words, a defense to an infringement
6 lawsuit is that the patent in question is invalid.

7 You may wonder why it is that you would be asked
8 to consider such things when the patent has already been
9 reviewed by a Government Examiner. There are several
10 reasons for this.

11 First, there may be facts or arguments that the
12 Examiner did not consider, such as prior art that was not
13 located by the PTO or provided by the applicant. In
14 addition, there is of course the possibility that mistakes
15 were made or important information overlooked. Examiners
16 have a lot of work to do and no process is perfect.

17 Also, unlike a court proceeding, prosecution of
18 a patent application takes place without input from people
19 who might later be accused of infringement, so it is
20 important that we provide a chance for someone who is
21 accused of infringement to challenge the patent in court.

22 In deciding issues of infringement and validity,
23 it is your job to decide the facts of the case. The Judge
24 will instruct you about the law, which may include the
25 meaning of certain words or phrases contained in the patent.

1 So it is your primary duty as jurors to resolve
2 any factual disputes and in some cases, such as infringement
3 and validity, to apply the law to those facts. To prove
4 infringement, the patentholder must persuade you by what is
5 called a preponderance of the evidence relating to the facts
6 of the case that the patent has been infringed.

7 To prove invalidity, the alleged infringer must
8 persuade you by what is called clear and convincing evidence
9 that the patent is invalid.

10 The Judge in your case will explain these and
11 other terms and provide additional specific instructions at
12 the appropriate time.

13 Good luck with your task, and thank you for your
14 service.

15 (End of video.)

16 THE COURT: All right. So continuing on a bit
17 from the video you have just seen, someone is said to be
18 infringing a claim of a patent when they without permission
19 from the patent owner import, make, use, offer to sell or
20 sell the claimed invention as defined by the claims within
21 the United States before the term of the patent expires.

22 The patent owner who believes someone is
23 infringing the exclusive right of the patent may bring a
24 lawsuit like this one to attempt to stop the alleged
25 infringing acts or to recover damages. The patent owner

1 must prove infringement of the claims of the patent.

2 A party accused of infringing a patent may deny
3 infringement and/or prove the asserted claims of the patent
4 are invalid. If a party challenges the validity of the
5 patent, he must decide based on the instructions I will give
6 you whether the challenger has proven the asserted claims of
7 the patent are invalid. The party challenging validity must
8 prove invalidity by clear and convincing evidence. I will
9 discuss more of this later.

10 So I'm going to go on to what the parties'
11 contentions are in this particular case.

12 TQ Delta contends that 2Wire offers to sell and
13 sells in the United States products that infringe claims 17
14 and 18 of the '881 patent. TQ Delta must prove that 2Wire
15 infringes one or both of these claims by a preponderance of
16 the evidence. That means that TQ Delta must show that it is
17 more likely than not that the 2Wire's products infringe one
18 or the other or both of the asserted claims.

19 To determine infringement you must compare the
20 accused product with claim 17 and claim 18 from the '881
21 patent. It will be my job to tell you what the language of
22 the patent claims means. You must follow my instructions as
23 to the meaning of patent claims. You are not to define the
24 patent claims yourselves.

25 I've ready told the parties what I think the

1 patent claims mean so you may see the parties using those,
2 what I told them during the course of the trial.

3 A patent claim is infringed only if 2Wire's
4 product includes each and every element in that patent
5 claim. If 2Wire's products do not contain one or more
6 elements in the claim, 2Wire does not infringe that claim.
7 You must determine infringement with respect to each of the
8 two patent claims individually.

9 2Wire denies as I have said that it is
10 infringing claims 17 and 18 of the '881 patent, and contends
11 that the two claims are invalid as being either anticipated
12 or rendered obvious by prior art.

13 So the evidence from which you are to find the
14 facts consist of the following: The testimony of witnesses,
15 documents and other things that are received as exhibits,
16 and any facts that are stipulated or formally agreed to by
17 the parties.

18 The following things are not evidence:
19 Statements, arguments and questions of the lawyers for the
20 parties in this case, objections by lawyers, any testimony
21 that I tell you to disregard, and anything you may see and
22 hear about this case outside the courtroom. There are rules
23 that control what can be received into evidence. When a
24 lawyer asks a question or offers an exhibit into evidence
25 and a lawyer on the other side thinks it's not permitted by

1 these rules, the rules of evidence, that lawyer may object.
2 This simply means that the lawyer is requesting that I make
3 a decision on a particular rule of evidence. You should not
4 be influenced by the fact that an objection is made.
5 Objections or questions are not evidence.

6 Lawyers have an obligation to their
7 clients to make objections when they believe the evidence
8 being offered is improper under the rules of evidence. You
9 should not be influenced by the objection or my ruling on
10 it. If the objection is sustained, ignore the question. If
11 it is overruled, treat the answer like any other.

12 If you are instructed that some item
13 of evidence, you receive for a limited purpose only, you
14 must follow that instruction. Certain testimony or other
15 evidence may be ordered struck from the record by me, and I
16 may also instruct you to disregard that evidence. Do not
17 consider any testimony or other evidence that gets struck or
18 excluded. Do not guess about what a witness might have said
19 or what an exhibit might have shown.

20 There are two types of evidence that
21 you may use in reaching your verdict. One type of evidence
22 is called direct evidence. An example of direct evidence is
23 when the witness testifies about something that the witness
24 knows through his or her own senses, something the witness
25 has seen, felt, touched, heard or did. If a witness

1 testified that she saw it raining outside, that would be
2 direct evidence that it was raining.

3 Another form of direct evidence is an
4 exhibit where the fact to be provided is in existence or a
5 current condition. The other type of evidence is
6 circumstantial evidence. Circumstantial evidence is proof
7 of one or more facts from which you can find another fact.
8 If someone walked into the courtroom wearing a raincoat
9 covered with drops of water and carrying a wet umbrella,
10 that would be circumstantial evidence from which you could
11 conclude that it was raining outside.

12 You should consider both types of
13 evidence that are presented to you. The law makes no
14 distinction in the weight to be given to either direct or
15 circumstantial evidence. You are to decide how much weight
16 to give any evidence.

17 In any civil case, facts must be
18 proven by a required standard of evidence known as the
19 burden of proof. In a patent case such as this, there are
20 two different burdens of proof. The first is called the
21 preponderance of the evidence. The second is called clear
22 and convincing evidence.

23 TQ Delta has the burden of proving
24 patent infringement by a preponderance of the evidence.
25 That means TQ Delta has to produce evidence, which when

1 considered in light of all the facts, leads you to believe
2 that what TQ Delta claims is more likely true than not.

3 Or to put it differently, if you were to put TQ
4 Delta and 2Wire's evidence on the opposite sides of the
5 scale, the evidence supporting TQ Delta's claims would have
6 to make the scales tip somewhat to its side.

7 2Wire has the burden of proving that
8 asserted claims 17 and 18 are invalid. It has to do so by
9 clear and convincing evidence. Proof by clear and
10 convincing evidence is evidence that shows the truth of a
11 factual contention is highly probable. Proof by clear and
12 convincing evidence is a higher burden of proof than proof
13 by preponderance of the evidence.

14 In deciding what the facts are, you
15 may have to decide what testimony you believe and what
16 testimony you do not believe. You are the sole judges of
17 the credibility of the witnesses. Credibility means only
18 whether a witness is worthy of belief. You may believe
19 everything a witness says, or only part of it, or none of it

20 You're going to hear some testimony
21 from expert witnesses. Where knowledge of a technical
22 subject matter may be helpful to a jury, as in this case, a
23 person who has special training or experience in that
24 technical field is someone that we often refer to as an
25 expert witness, and that person is permitted to state his or

1 her opinion on those technical matters. However, you're not
2 required to accept their opinion. As with any other
3 witness, it's up to you to decide whether to rely upon it.

4 In weighing an expert's testimony, you
5 may consider an expert's qualifications, the reasons for the
6 expert's opinion, and the reliability of the information
7 supporting the expert's opinion. Expert testimony should
8 receive whatever weight and credit you feel appropriate
9 given all the other evidence in the case. You are free to
10 accept or reject the testimony of experts just as with any
11 other witness.

12 All right. So here's my last
13 instruction for now. We will start with the opening
14 statements. Before we do that, I want to explain the
15 procedures we will follow during trial, the format of the
16 trial.

17 This trial, like all jury trials,
18 comes in multiple phases. We've completed the first phase
19 which was to select you as jurors.

20 The second phase is the opening
21 statements. The opening statements of lawyers are
22 statements about what each side expects the evidence to
23 show. The opening statements are not evidence for you to
24 consider in your deliberations. You must make your decision
25 based on the evidence not the lawyers' statements an

1 arguments.

2 And the third phase, the evidence will be
3 presented to you. Witnesses will take the witness stand,
4 and documents will be offered and admitted into evidence.

5 TQ Delta goes first in calling witnesses to the
6 witness stand. These witnesses will be questioned by TQ
7 Delta's counsel by what is called direct examination.

8 After the direct examination of the witness is
9 completed, 2Wire has an opportunity to cross-examine the
10 witness. After TQ Delta has presented the witnesses, 2Wire
11 will call the witnesses who will also be examined and
12 cross-examined. The parties may present testimony of a
13 witness by having the individual testify live for you or by
14 playing a videotape of the witness' deposition testimony.
15 Both are acceptable forms of testimony.

16 A deposition is the sworn testimony of a witness
17 taken before trial. It is entitled to the same
18 consideration as if the witness had testified at trial.

19 The evidence is often introduced piecemeal
20 meaning all the evidence related to an issue may not be
21 presented all at one time, but rather may be presented at
22 different times during the trial. You are to wait until all
23 the evidence comes in before you make any decisions, or in
24 different words, keep an open mind throughout the trial.

25 In the fourth phase, I will read you the final

1 jury instructions. I will instruct you on the law that you
2 must apply to this case. I've already explained a very
3 little bit of it to you. In the fourth phase I will explain
4 the law to you in more detail.

5 In the fifth phase, lawyers are going to have
6 the opportunity to talk to you in what's called closing
7 arguments. As with the opening statements, what the lawyers
8 say in closing arguments is not evidence for you to consider
9 in your deliberations.

10 Finally, the sixth phase is the time for you to
11 deliberate and reach a verdict. You will evaluate the
12 evidence, discuss the evidence among yourselves, and decide
13 the issues in this case.

14 I do expect that at the end of the case, I will
15 give you a written copy of these instructions so that I
16 don't have to read them to you again.

17 All right. I think we're ready to proceed with
18 opening statements. Mr. McAndrews.

19 MR. PETER McANDREWS: Yes, Your Honor. May it
20 please the Court.

21 Good morning, ladies and single gentleman of the
22 jury. My name is Peter McAndrews. It's my privilege to be
23 here this morning on behalf of TQ Delta who's the patent
24 owner in the case.

25 Allow me to introduce to you Abha Divine. She's

1 the managing director of TQ Delta. Also, on my trial team
2 are Tom Wimbiscus, my brother, Paul McAndrews, who I noticed
3 I failed to mention his name earlier when we were listing
4 off names, and he got me for that. And Michael Farnan is
5 sitting back there.

6 This is a case about 2Wire's infringement of TQ
7 Delta's U.S. Patent Number 7,453,881. We're going to refer
8 to that as the '881 patent throughout the case.

9 This is the ribbon copy of the '881 patent. And
10 up on the screen, we should have the front page of the
11 patent. So that's the front page of the patent. I know
12 it's a little small from where you are, so if we can zoom
13 in. What I wanted to point out, so that's the patent. It
14 was issued in 2008.

15 If you could show me the names of the inventors,
16 please. So the inventors on this patent are Marcos Tzannes,
17 Ed Reiter, and Chris Cahill. You're going to hear some live
18 testimony today from Mr. Tzannes. He's actually going to be
19 our first witness. Mr. Tzannes is sitting in the third row
20 in the purple tie, glasses there. You're also going to hear
21 some videotape testimony from Chris Cahill.

22 Now, you've heard quite a bit about this from
23 the video, but just to summarize, a patent is an
24 intellectual property right that covers an invention. A
25 patent is awarded only after very careful consideration and

1 review by a patent examiner who is skilled in the relevant
2 field of the patented invention to examine the invention and
3 other prior patents and information to determine whether the
4 invention is worthy of patenting.

5 Once granted, a patent is supposed to protect
6 the inventors and the patent owner from infringers that use
7 that invention. As the video said, it's like a deed to
8 property where no one is allowed to trespass without
9 permission of the owner.

10 The evidence will show that 2Wire is infringing
11 the '881 patent by using the patented inventions in their
12 products without permission and without any payment.

13 Now, go back to the slide, please.

14 So you heard a little bit about this, but the
15 '881 patent relates to an important improvement in the
16 technology called DSL which is shorthand for Digital
17 Subscriber Line. DSL provides high speed data internet
18 services over telephone lines. The invention relates to a
19 particular technology called bonded DSL. You're going to
20 hear that term quite a bit.

21 Bonded DSL increases data rates by using two
22 phone lines at the same time to carry data at the same time.
23 Bonded DSL is used to provide greatly increased data rates
24 and coverage area for DSL networks. It allows more homes to
25 receive greater data rights despite the ever increasing

1 consumption of digital content.

2 Now, the black box in the center of the screen
3 there is an example of one of the accused products. I also
4 have one here. So this is generally what the accused
5 products look like. They're referred to as DSL modems. You
6 may also hear them referred to as CPE products. CPE means
7 customer premise equipment. So this would be the device
8 that sits either in your home or sometimes in a smaller
9 business would use a unit like this.

10 There is a corresponding unit that would be at
11 the central office of the telephone company that's called
12 COE or central office equipment. Sometimes it's referred to
13 as a DSLAM. But just in general it's kind of the head end
14 of the DSL network.

15 Next slide, please.

16 So this is generally what my -- I'm going to
17 keep this as brief as I can because we have witnesses that
18 will tell you a lot about this stuff. But I'm going to
19 provide you a little bit of background on DSL technology.
20 I'm going to explain the complex problems the inventors
21 faced and their solution. And I'm going to explain some of
22 the evidence of 2Wire's infringement. And then I'm going to
23 explain to you why 2Wire is wrongly arguing that the Patent
24 Office made a mistake.

25 Next slide, please.

1 So the invention involves some complex
2 technology. I'm going to introduce you to some of the
3 fundamental concepts that hopefully you can build on. Don't
4 worry if you don't grasp it right away because as I said,
5 you're going to have testimony from the two inventors.
6 You're going to hear testimony from Dr. Todor Cooklev and
7 Dr. Almeroth. They're both Ph.D.s in intellectual
8 engineering, both professors and they have skills
9 particularly in the digital communications field.

10 This slide illustrates at a very basic level one
11 of the theoretical benefits of bonding. You have the home
12 at the top. It's capable of receiving a data rate of 20
13 megabits per second. That same home if it uses a second
14 telephone line if it has one going to its house, it's lucky
15 to have that, it could theoretically receive a data rate of
16 40 megabits per second. On the next slide, this is another
17 advantage of DSL, it's said to increase the reach of the DSL
18 services. Reach is essentially the distance at which the
19 customer can receive adequate service.

20 And the reason for this is signals get weaker
21 the further they have to travel down a copper wire so the
22 home that's a longer distance away would normally have to
23 settle for a lower rate, however, bonding allows that same
24 home further away as shown in the picture with bonding it
25 can receive the same rate as his friend or neighbor that's a

1 little bit closer to the central office. This obviously
2 benefits the customer, they get a higher data rate. It also
3 benefits the phone company because they can have an
4 additional customer buy a premium data plan.

5 The next slide, please.

6 This is kind of a very basic illustration of
7 what bonding, how it works. So on the left side of the
8 image, we have this central office device, or CO device.
9 That device has two transceivers in it. On the right side
10 on the other side of the two phone lines we have this CPE
11 device which would be at your home typically, that also has
12 two transceivers. Each, transceiver one in each device
13 transmits over phone line one, transceiver two transmits
14 over phone line two.

15 Transceiver by the way is generally just a
16 shorthand for transmitter receivers, so there is actually
17 data flowing in both directions over both lines.

18 And so that's a general concept of the makeup of
19 the physical structures. So if we can go to the next slide,
20 please. And here is a simple animation of how bonding
21 works. On the left side there is an incoming data stream.
22 And if you can run the animation. The data streams are
23 split into two substreams and each substream is transmitted
24 down the lines. And then the substreams that are received
25 by the transceivers on the other end are then put back

1 together, hopefully in the right order, into a single data
2 stream and passed on to the home network.

3 So that's the simple perfect world view of how
4 bonding is supposed to work. But that's not reality and of
5 course that's not the invention. You'll hear testimony
6 about why it's not so simple. You'll hear testimony
7 explaining that there are a number of complex and
8 interrelated processes that impact each other, something
9 that appears to provide an advantage will cause a problem in
10 another area. The inventors had to come up with innovative
11 ways to make it all fit together like no one had ever done
12 before.

13 Next slide, please.

14 So let me mention some of those problems. One
15 of the really amazing things about DSL is that it operates
16 over plain old telephone lines that were intended only to
17 carry telephone calls. And they may have been installed
18 more than thirty, forty, even fifty years ago these
19 telephone lines. Using old wires, it's a big benefit to the
20 telephone companies because they didn't have to rip out and
21 replace the millions of miles of copper wire that they had
22 already running to their customers. They don't have to dig
23 through walls and buildings, they don't have to dig
24 trenches. It's really a big benefit to use the existing
25 infrastructure that they had. But there is big challenges

1 to using old telephone lines.

2 The downside of using old telephone lines is
3 they were never designed to carry a bunch of digital data,
4 it was just supposed to be an analog voice call. They're
5 noisy. I don't mean loud noises, I mean electrical
6 interference really impacts these copper wires. The wires
7 themselves can be inconsistent, different gauges depending
8 on when they're gauged, different thickness of the wire
9 depending on when they were installed, they can be nicked,
10 they can be cut, some of the rubber coating, it tends to be
11 very thin. Thin wires can be damaged, they can run long
12 dances from the telephone carriers' central office. And as
13 I said, as telephone signals or signals transmit down these
14 lines, they get weaker as they go.

15 The lines may be wrapped around other telephone
16 lines and they may run close to other noise sources like
17 power lines and transformers and radio towers, all of these
18 impact the signals on these wires because they were never
19 intended to carry digital data. It's really a big
20 challenge. Even weather, temperature can impact the signals
21 on these lines.

22 Water can leak into them. There is all sorts of
23 reasons why these wires are inconsistent. During the course
24 of the trial you'll hear testimony about how the inventors
25 of the '881 tackled some of these challenges and invented a

1 way to increase the data rate and reach DSL using bonding in
2 a way that the service remained reliable and yet not overly
3 complicated or costly.

4 Next slide, please.

5 So kind of unique to bonding, one of the
6 problems that's faced is that the individual lines running
7 to the same home may have substantially different electrical
8 characteristics. You'll hear how one line such as the one
9 illustrated in red may have been installed decades earlier
10 using old wire technology. And it may run a different path
11 to the home than the newer lines such as the ones
12 illustrated in green. But even when wires follow generally
13 the same path like they do for customer B, they can be
14 subject to different levels of what's called cross talk.
15 They generally will go in a binder with other telephone
16 wires for the people on your street or in your neighborhood
17 and depending on how they're wrapped in the cable, the
18 interference that each wire receives is different from
19 others. This means the lines will not support the same data
20 rates. I had showed you in the perfect world, you got ten
21 plus ten equals twenty, that's great, we got double the data
22 rate. But that's not actually how it works. This is a
23 problem.

24 Next slide please.

25 This is a big problem, big problem because

1 earlier attempts at bonding before the invention of the '881
2 patent only worked if both lines ran at exactly the same
3 data rate and this wasted significant potential band width
4 at the house. The reason for that is a simple illustration
5 here. We got one telephone wire, the red one is capable of
6 seven megabits per second, the second wire is capable of
7 thirteen ordinarily, so that would have been a twenty
8 megabit data service to the house, but unfortunately with
9 the prior bonding technology they had to run at the same
10 data rate so you had to slow -- you can't increase seven
11 because that's all it was capable of, so you have to slow
12 down the thirteen to seven, now I have got a symmetrical
13 line, they both run at the same data rate and unfortunately
14 I have lost six megabits per second out of my data rate.
15 These are just approximate numbers. These differences will
16 vary depending on the wires, but this was a limitation of
17 prior bonding technology.

18 The reason why earlier bonding systems had this
19 limitation is when the two data streams are put back
20 together at the receiving end, and I show this in a picture
21 at kind of the perfect world, they're going out in one order
22 and being received in the same order. But if the data rates
23 are different, they're not going to be put back in the right
24 order unless some other things happen.

25 Let me add another level of complexity here.

1 Because of the harsh environment I described for DSL
2 networks, it's also important to use certain error
3 correction techniques that can fix data errors that happened
4 when the telephone lines get hit with bursts of noise. So a
5 lightning strike, power line surge, appliances can cause
6 these things to happen. When the burst of noise occurs, it
7 can interrupt data and these DSL systems because that's
8 going to happen, it's not an exceedingly rare occurrence for
9 this to happen, they have error correction techniques and
10 two of the error correction techniques that are interrelated
11 that you're going to hear about are interleaving and Reed
12 Solomon coding or RS coding. These techniques provide
13 advantages because it reduces the number of errors on your
14 lines and helps you improve your data rate. But the
15 downside of these techniques is they add further delay to
16 the data received on each phone line. So the combination of
17 data rate and these transmissions parameter values used for
18 interleaving and RS coding impact the order in which data is
19 received from both lines.

20 Each line has what's called a latency
21 or a delay. You're going to hear this term, latency delay.
22 But you can think of it as the delay in time between when
23 the DSL transmitter in one DSL modem starts to send a block
24 of data and the time that the block of data is fully
25 received on the other end. So if we're transmitting it from

1 the central office to the CPE device when the central office
2 receives the data that it's supposed to be sending to home,
3 that starts the clock on the delay.

4 And then it has to be encoded, and
5 that's part of the delay. And then it goes down the line.
6 It goes to the other end, and it's received. It has to be
7 decoded. And so before it's ready to be sent up to the
8 network, that's kind of like the start and finish of what we
9 call latency.

10 Now, each line is going to have its
11 own latency. I described how each line can potentially have
12 a different data rate. Having a different data rate and
13 having different error correction values on these lines
14 potentially will lead to differences in latency or
15 differences in delay. So we call -- calling it a difference
16 in latency, we call it differential latency. It's
17 differential delay. But those are terms that you're going
18 to hear quite a bit about this week.

19 If we go to the next slide, please.
20 Don't run the animation just yet. This slide is going to be
21 a very simple illustration of one of the problems that's
22 caused by differential latency. And because the blocks of
23 data -- so this is actually going to show a bit-by-bit
24 transmission, but these error correction codes that I talked
25 about in the interleaving things aren't actually transmitted

1 in these little bits. So actually when you see this, you
2 can kind of think of these bits as being blocks of, you
3 know, lots of data, you know, many, many bytes of data. A
4 byte is eight bits of data, but many bytes of data going
5 down the lines.

6 But in any event, the idea is that
7 these have to be put back together in the right order after
8 they're fully received on the far end. And the idea is that
9 if they're not received in the right order, so if these
10 lines have different latencies, and just for simplicity
11 they're showing different data rate, but assume that the
12 line at the bottom has a -- so the odd thing about this is
13 the higher the data rate, the lower the latency. You're
14 going to hear more about this. You don't have to grasp it
15 all now, but the higher the data rate, the lower the
16 latency. The lower the data rate, the higher the latency.
17 The higher the latency.

18 So but what this means is the latency
19 lower on the bottom line, those data packets, those blocks
20 of data are going to be received and decoded quicker than
21 the top line. So because they have to go back in the right
22 order, what this means is there has to be storage of those
23 blocks of data that are coming in from the line with lower
24 latency or the faster line.

25 So that has to be stored in a buffer.

1 Now, that buffer is limited in size, and the kind of memory
2 that's needed for that, it can be expensive. It adds to the
3 cost. It adds to the complexity. As you store data, you
4 have to keep track of numbers, and actually the numbering
5 system even can cause your data rate to go down because you
6 have to transmit numbers. The higher those numbers are, the
7 more information you have to transmit by the numbers.

8 In any event, if we can run the
9 illustration here. The general idea is you've got a faster
10 line. You've got a buffer. And if the buffer is overrun,
11 the connection goes down. And as we all know, nobody likes
12 when their connections are broken.

13 So there's a cost concern. There's a
14 concern of the lines braking down and not running properly.
15 So you're going to hear testimony about how the inventors of
16 the '881 patent solved all of these problems by allowing the
17 data rates on the bottom phone lines to be different unlike
18 that prior art bonding scheme that I talked about, and yet
19 providing techniques to reduce the difference in latency
20 between the two lines.

21 They did this by cleverly repurposing
22 and using the right RS coding and interleaving parameter
23 values to reduce the difference in latency between the
24 bonded lines. They did this by constraining, at the
25 time the transceivers are turned on and initialized, the

1 values of these parameters -- the values of these parameters
2 that each transceiver can use or can select for itself for
3 use.

4 By intelligently controlling these transmission
5 parameter values at the time of configuration, the inventors
6 prevented the transceiver from using parameter values that
7 would cause problems.

8 The invention at stake in this case,
9 the one that's infringed by 2Wire is defined by what are
10 called patent claims. You heard this in the described video
11 and from Your Honor. They're called patent claims.
12 Specifically it's Claim 17 and 18, if we can pull those
13 up.

14 So these are the claims that define
15 the metes and bounds of the invention. I'm going to read
16 through these just -- you know, you can read it for
17 yourself, but it's a plurality of bonded transceivers. So
18 that means that you have two transceivers at least that are
19 bonded. Each bonded transceiver utilizing at least one
20 transmission parameter value to reduce a difference in
21 latency between the bonded transceivers. So it's reducing
22 in differential latency between the two lines with the two
23 transceivers. And this is talking about just the two
24 transceivers in one device. It's focused on one device. So
25 for example, the two transceivers in -- this is what

1 plurality of bonded transceivers is. It's -- the bonds that
2 we're talking about is not the bonds between one transceiver
3 here and the transceiver at the other end. So we're talking
4 about these are bonded because they create the bonded
5 connection that puts data on both lines.

6 And then the final element there is
7 wherein a data rate for a first of the bonded transceivers
8 is different than a data rate for a second of the bonded
9 transceivers. So that's claim 17, and we're going to ask
10 you to find that the Claim 17, based on the evidence, is
11 infringed.

12 And then separately, claim 18 adds
13 some additional detail, and so that can also be infringed.
14 The additional detail that claim 18 adds is it says the
15 transceivers of Claim 17, so it includes all the elements of
16 17, but it says wherein at least one of the transmission
17 parameter values is a Reed Solomon Coding parameter value, I
18 mentioned that already, and an interleaving parameter value.

19 So those are the ones we're primarily
20 focused on this week. This is an or. So there's an or down
21 at the end. It says code word size value or a framing
22 parameter value. That's an or.

23 So claim 17 is met when any one of
24 these is found in the accused products. But as I said,
25 we're going to show that both parameters, Reed Solomon

1 Coding and interleaver parameter are used.

2 So now, here's just a high-level
3 preview of some of the evidence. We can put back the slide,
4 please. This is a high-level preview of some of the
5 evidence that you're going to hear about 2Wire's
6 infringement.

7 So first, the evidence will show that
8 2Wire represents to its largest customer, AT&T, that its DSL
9 products have all of the functionality defined in the claims
10 of the '881 patent. AT&T specifies what the products have
11 to have, and 2Wire responds to that specification by saying,
12 yes, we comply with that. And we'll show you how
13 documentation confirms that.

14 Second, the evidence will show that
15 2Wire also represents to the public and to its customers
16 that its products are complying with an industry standard
17 for DSL bonding which is called G.998.2. You're going to
18 hear G.998.2 a fair number of times. That's also referred
19 to as G.bond. It's also referred to as an Ethernet bonding
20 standard.

21 The evidence will show that the
22 standard requires that compliant products must include
23 functionality corresponding to each element of the claims of
24 the '881 patent. The parties have a debate over whether
25 certain provisions in this standard are merely optional as

1 opposed to mandatory, but at the end of the day, it doesn't
2 matter whether they're optional or mandatory because the
3 other evidence shows that they actually practice the option.
4 Even if it's optional, as they say, we show that they
5 practice the option.

6 And the evidence will show that the
7 software that controls the operation of the accused products
8 causes the accused products to perform functions required by
9 the claims of the '881 patent, and also the option in the
10 standard.

11 So if we can pull up -- well, so the
12 name of one of the very important documents that we're about
13 to pull up here is something that 2Wire calls the
14 UberMatrix. It has nothing to do with ride sharing. It's
15 just a very big and very important document in the case.
16 UberMatrix is used by 2Wire and AT&T to exchange information
17 about how 2Wire's DSL products work. It includes AT&T's
18 requirements for the accused products and 2Wire's indication
19 of whether the product complies.

20 So I know that text is incredibly
21 small. We're going to blow it up. Just let me tell you
22 kind of what the layout is here. So there's a wider column
23 here. It's column CO. That includes the requirements.

24 Further down the line, the columns
25 that have a yellow header, those are the response for

1 certain software releases of the accused products. And so
2 for example, for Release 10.5, and you're going to hear
3 evidence about the accused products and the particular
4 software release that they went out in. So this is a 10.5
5 release.

6 And then you see the C there. That's
7 an example of 2Wire's response. It says, yes, we comply
8 with that requirement.

9 And so let me -- so what I'd like to
10 do is I'd like to put up side by side, I guess would be how
11 we put this, side by side. So here's the UberMatrix. On
12 one side, I've pulled out some of the requirements. So
13 these things that are highlighted on the left-hand side,
14 those are -- those come from the requirements column on the
15 right-hand side. We have the claim in the patent.

16 And the evidence will show -- well,
17 the evidence here, this is -- this is the UberMatrix that we
18 have portions in there, each of which 2Wire says their
19 products comply with where we have a requirement.

20 And so the first requirement is device
21 must support Ethernet-based bonding of two DSL connections
22 complying with -- and the ANSI standard is -- A-N-S-I is not
23 really relevant to the case. It says NIT-TG.998.2. So
24 998.2 is the DSL bonding standard I mentioned.

25 And they confirm compliance, and that

1 corresponds compliance with the first part of the claim
2 there. Sometimes -- that first part of the claim, by the
3 way, is called the preamble, and the other two parts of the
4 claim would be called element one of the claim and element
5 two of the claim, for example, TI.4. The second one there
6 is bonded lines must be configured to run on the same
7 interleaving delay. So again, delay or latency.

8 So both lines have the same delay,
9 then the difference in latency between them is zero. So
10 it's been reduced to zero. In that case, that's the green
11 element claim. It says each bonded transceiver utilizing at
12 least one transmission parameter value to reduce a
13 difference in latency between the bonded transceiver. And
14 by the way, it says interleaving delay, and as I mentioned,
15 one of the transmission parameters is an interleaver
16 transmission parameter. So that's exactly what that's
17 talking about. And then the final element there, and
18 I know it's very difficult to see the one in red, it says in
19 red there, it says the device must support bonded lines that
20 are not running at the same rate. So that corresponds to
21 the final element of the claim wherein a data rate for a
22 first of the bonded transceiver is different than a data
23 rate for a second of the bonded transceivers.

24 That's just one of the documents.
25 You're going to hear some testimony from 2Wire's engineer

1 that's going to be played by video. I think he may be
2 showing up live as well. But in any event, he also
3 confirmed some of the same information we just saw there.

4 Now, on to the bonding standards. I'm
5 not going to take you in any level of detail through the
6 specifics of how the bonding standards show infringement,
7 but I did want to point out the background here. The
8 inventor of the '881 patent knew that they had a great idea
9 that would benefit the public, so they decided to develop a
10 new industry standard for DSL.

11 Mr. Tzannes personally started and was
12 the chairman of a committee to develop bonding standards at
13 the International Telecommunications Union, and that's ITU
14 that we saw on the slide there. The purpose of that group
15 is to create a standard that could be followed by companies
16 that wanted to build products that perform DSL bonding.
17 This resulted in G.998.2 standard which is also known as
18 G.bond or Ethernet as I mentioned.

19 Now, the G.bond standard incorporates
20 by reference requirements of another international standard
21 called the IEEE 802.3ah standard. It's kind of a mouthful,
22 but it incorporates it by reference, and it says that
23 certain portions of that 802.3ah are mandatory when you do
24 998.2.

25 Mr. Tzannes was also a leader on the

1 committee at the IEEE that developed the DSL bonding
2 portions of the 802.3ah. And Mr. Cooklev, Dr. Cooklev will
3 explain a little bit more about how the bonding standards
4 are further evidence of infringement.

5 And lastly, the evidence will show
6 that the software for the semiconductor chips that control
7 this device works in a way that reduces the difference in
8 latency between the bonded transceivers. And generally what
9 you're going to hear from Dr. Almeroth who has analyzed the
10 source code, which is the way that the devices reduce the
11 difference in latency between the bonded transceiver, is
12 that they constrain the time of initialization of both
13 transceivers, the latency that these devices can take on,
14 the latency that the transceivers can take on by
15 constraining the value of their latency between a maximum
16 and minimum. So it's reduced.

17 Now, I want to move to the validity issues that
18 you're going to be hearing about from 2Wire. So they claim
19 that even if they infringe the '818 patent is not valid. In
20 other words, they claim that the Patent Office made a
21 mistake and should not have issued the '818 patent at all.
22 2Wire will provide testimony from Dr. Krista Jacobsen that
23 attempts to show that inventions of the '881 patent were
24 actually invented first by someone other than Mr. Tzannes,
25 Cahill and Reiter. Dr. Jacobsen relies on an earlier

1 standard for bonding different kinds of communication lines
2 called T1E1 lines. It's called the IMA, or IMA standard.
3 I'm going to mention that in a little more detail in a
4 moment.

5 She also relies on several other earlier patents
6 and collectively as we heard in the video, these are called
7 prior art, or prior art references.

8 But the evidence will show that Dr. Jacobsen is
9 incorrect about the prior art. The evidence will show that
10 none of these references provided the combination of
11 allowing bonded lines to operate at different data rates
12 while using transmission parameter values to reduce the
13 difference in latencies between the bonded lines. Instead,
14 the collection of prior art she relies on demonstrate the
15 prior problems with bonding, but no good solutions.

16 So the IMA standards on the screen there I'm
17 just going to mention a few things about it. This is the
18 earlier bonding standard that Dr. Jacobsen refers to. Now,
19 at a very base, the one of the biggest problems with the
20 standard is it required -- there is a requirement in the
21 standard that the bonded lines run at the same rate. If you
22 remember what I showed you there, in DSL, and this is a
23 standard that wasn't necessarily slated for DSL but
24 potentially could have been used there, it forced them to
25 run at the same rate and that would have lost significant

1 bandwidth. But even so, given the older type of technology
2 used for T1E1 there were potentially very large differences
3 in latencies between the two lines.

4 But the IMA standard did not attempt to do
5 anything to reduce that difference in latency, rather it
6 just used other techniques to compensate for that massive
7 difference, for example, massive memories to keep track of
8 things. In fact, it could reduce the latency, but they
9 don't bond. The IMA standard represents all that was bad
10 about bonding before the invention of the '881 patent.

11 A second of the prior art references that
12 Dr. Jacobsen will rely on also represents a problem and not
13 the solution later invented by Dr. Tzannes and his
14 co-inventors. It's the Keller-Tuberg. The reason we call
15 it that, that's the name of the inventor, the last name is
16 how we refer to these in the prior art. The Keller-Tuberg
17 patent recognizes there can be very large differences in
18 latency between bonded lines, but it doesn't do anything to
19 reduce. Again, it doesn't do anything to reduce that
20 latency, instead it just adds more and more memory from one
21 -- more and more memory to take care of the difference in
22 latency, so you can kind of think of it as placing an ever
23 growing and very expensive band-aid on the problem but not
24 solving it.

25 Next we have the Edvardsen patent, so Edvardsen

1 is another patent. It looks a little bit different because
2 this is a PTC patent which is generally something that's
3 used to give patent rights, corresponding patent rights in
4 foreign countries. The fact that it's foreign doesn't
5 impact its use as a prior art reference, but in any event
6 the Edvardsen reference, the evidence is going to show that
7 it proposes a highly impractical solution that would never
8 work in the real world, certainly not the real world of
9 bonding, of bonding DSL lines. It recognized the problem of
10 having different latencies on different bonded lines, but it
11 proposes a solution that it calls deterministic
12 multiplexing. This fanciful name is appropriate for the
13 solution that proposes to send individual bits of data down
14 each line. But it doesn't provide any ability to perform
15 error correction or interleaving, it doesn't have blocks of
16 data that have a latency, it has little bits going down each
17 line which ignores the reality of communication systems.
18 What the effect of sending individual bits down the line is
19 it no longer has two latency paths, it creates a single
20 latency path out of a single line. When you don't have a
21 first latency and a second latency, you have one, you can't
22 have a difference. The concept of a different latency is
23 gone, you haven't reduced the difference in latency, there
24 isn't one. In any event, it's an impractical solution and
25 certainly discloses the invention of claim 17 and claim 18.

1 Lastly, the last of the main references that we
2 understand Dr. Jacobsen is going to rely on is called
3 Counterman, so this is the Counterman patent is the name of
4 it. The evidence will show that the Counterman patent does
5 not do anything to reduce the difference in latency between
6 bonded lines. Again, the interesting thing about Counterman
7 is the examiner at the Patent Office actually fully
8 considered Counterman when he was examining and then
9 subsequently granted the '881 patent. How do we know this?
10 We know this because the Counterman patent is listed on the
11 cover page of the patent. If you can bring that up.

12 So the top call out there is from the left-hand
13 column where it says references cited and then that list of
14 references cited carries on to the other side and at the
15 very top of the column, we have highlighted in the second
16 call out there, it shows the very Counterman reference that
17 Dr. Jacobsen says renders the patent invalid. But that was
18 already considered by the patent examiner.

19 By the way, that -- you heard about how
20 inventors should bring patents to the attention of the
21 Patent Office. Well, this is one have the ones that the
22 inventors brought to the attention of the Patent Office.
23 And the examiner reviewed that patent, had it in his
24 collection when he reviewed the claims of the patent, and
25 they're allowed over Counterman.

1 But in any event, the way Counterman works is
2 that the number of lines that are configured -- I'm sorry,
3 the way Counterman works is it configures a number of lines,
4 and it's more than just two running your house, it's for a
5 different system where you're going to have multiple lines
6 and it configures them without any regard to any
7 differential latency in the lines.

8 After that, after each line has been configured
9 it picks one of the lines that happen to have similar
10 latencies. But this after the fact pairing of bonded lines
11 does not disclose the invention. Counterman leaves to
12 chance whether any of the two lines will have similar enough
13 latencies that they can be paired and if they don't, it
14 simply can't pair them. It doesn't do anything to reduce
15 the difference in latency. It certainly doesn't describe
16 configuring transmission parameter values to reduce that
17 difference in latency between bonded lines.

18 The additional problem with Counterman is really
19 impractical because it assumes an environment where there
20 are multiple lines to choose from, and of course the best
21 you're going to have running to your house is two fixed
22 lines. You can't run off and borrow your neighbor's and
23 plug it into your own house if it happens to have the right
24 latency on the line, so it's not a solution that would work
25 in a DSL network. So in sum the evidence will show there is

1 not a single one of the prior art references that discloses
2 the claimed invention. The inventors of the '881 patent
3 were the first to make this invention and 2Wire is using it
4 without permission and without payment.

5 I want to thank you in advance on behalf of TQ
6 Delta, Ms. Divine, Mr. Tzannes for being here and for your
7 time and attention to the evidence that you're going to hear
8 over the next several days.

9 THE COURT: Thank you, Mr. McAndrews.

10 Mr. Schuman, how long do you estimate your
11 opening is?

12 MR. SCHUMAN: About thirty minutes, Your Honor.

13 THE COURT: Let's go ahead and do it now.

14 MR. SCHUMAN: Before we do that, Your Honor, may
15 we be heard at side-bar on one matter?

16 THE COURT: Sure.

17 (Side-bar discussion.)

18 THE COURT: Yes.

19 MR. SCHUMAN: Your Honor, I have two motions
20 that I would like to make. The first is a motion for
21 judgment based on the opening statement. There was no
22 representation that there is going to be any evidence of the
23 actual reduction in configuration latency offered by the
24 plaintiffs in this case. I tried to listen very carefully.
25 I heard Mr. McAndrews say the inventors solved the problem

1 by cleverly repurposing the RS and coding values to
2 constrain the lines. No evidence of an actual reduction, a
3 difference in configuration latency which is what the
4 Court's claim construction requires. So that's a motion for
5 judgment based on the opening statement.

6 THE COURT: Well, that's denied. I never heard
7 of a JMOL based on an opening statement. What's the second
8 thing?

9 MR. SCHUMAN: The second thing, Your Honor, is a
10 motion for a curative instruction, claim construction, at
11 the claim construction phase we litigated this issue and the
12 claim was construed to be about a reduction in configuration
13 latency. The patent defines different types of latency,
14 configuration latency being the one that we're talking about
15 here today in the trial. A different kind of latency talked
16 about in the specification is wire latency. And wire
17 latency is not what this claim is about. And the patent
18 talks about configuration latency, wire latency and design
19 latency. At claim construction we construed this claim to
20 be about configuration latency only. Wire latency is
21 differences in the twisted pair, twisted pairs, specifically
22 the DSL electrical signals can experience different delays
23 based on the difference in length of the wire, the gauge of
24 the wire, the number of bridge taps or the like. A
25 significant portion of Mr. McAndrews' opening statement was

1 talking about wire line latency which is outside of the
2 claim and outside of the evidence being introduced at this
3 trial.

4 THE COURT: All right. Do you have anything to
5 say about that?

6 MR. McANDREWS: So, Your Honor, first of all, I
7 don't agree that that's the way my opening went, but I
8 promise you that we are going to be distinguishing between
9 configuration latency and wire latency. And the reason for
10 that is one of the prior art references actually only is
11 concerned with wire latency.

12 I would be happy to clarify for the jury if you
13 think it's necessary right now that there is two types of
14 latency and that your claim construction is talking only
15 about configuration latency. I didn't think that it was a
16 detail that was necessary for the jury to grasp immediately.
17 But Dr. Cooklev plans to very clearly distinguish
18 configuration latency from wire latency.

19 THE COURT: All right.

20 MR. McANDREWS: I would be happy to cure it.

21 THE COURT: Do you want him to do that?

22 MR. SCHUMAN: No, I was not proposing another
23 opportunity for Mr. McAndrews to address the jury. I think
24 there needs to be a curative instruction that the claim
25 construction was based on configuration latency only.

1 THE COURT: It's the opening statement. I'm
2 going to accept his representation what he's planning on
3 doing and I'm not going to give a curative instruction when
4 I'm not sure there was anything that actually needs to be
5 cured at this point. And once more, he's offered to address
6 the issue himself if you want, so based on everything I'm
7 going to deny that request, too. All right.

8 MR. SCHUMAN: Thank you, Your Honor.

9 THE COURT: So you're good to make your opening?

10 MR. SCHUMAN: Sure.

11 THE COURT: Thank you.

12 (End of sidebar discussion.)

13 THE COURT: Mr. Schuman, go ahead.

14 MR. SCHUMAN: Thank you, Your Honor.

15 Technically it's good afternoon, ladies and
16 gentlemen. As you heard earlier my name is Brett Schuman.
17 And I want to introduce my team one more time. We have
18 Ms. Rachel Walsh, Doug Kline, Jody Barillare and also
19 Mr. Andy Ong in the front row. We're team 2Wire. I would
20 also like to introduce Jim Shead. He's the corporate
21 representative from the company, 2Wire.

22 Now, this is 2Wire's logo. We're very proud to
23 be representing 2Wire in this case before you this week
24 because despite everything you just heard from
25 Mr. McAndrews, the evidence will show that 2Wire does not

1 infringe these two claims of this '881 patent. Of course,
2 as the Judge said in his preliminary instruction, we ask you
3 to keep an open mind and when you go back to deliberate this
4 case, we think all the evidence will show, show you that
5 2Wire does not need and does not use the technique in TQ
6 Delta's '881 patent.

7 I would like to start by introducing my client,
8 2Wire, to you. And the easiest way to do that is with this
9 depiction of DSL. As you heard already the case involves
10 DSL, Digital Subscriber Line. It uses a portion of your
11 plain old copper telephone wire to deliver data service,
12 broadband, video, music, internet.

13 DSL uses primarily three pieces of equipment to
14 do that. A central office here includes maybe a server, the
15 plain old copper wire hanging over the telephone pole
16 outside of your home, and this little thing in the depiction
17 of the home, which is a DSL modem. And over here on the far
18 left we have the internet, music, content, anything that you
19 might want to stream into your home.

20 My client, 2Wire, was founded in 1998, just to
21 make and sell the DSL modems. And they delivered their
22 first DSL modem in 2000, and this is one of them. It looks
23 very similar to the one Mr. McAndrews showed you. It's
24 actually a different product number, but this is what the
25 DSL modem that my client makes looks like.

1 Now, this is Ben Miller. He's a DSL engineer at
2 2Wire. He was a very early employee at 2Wire. He began
3 there in 1999 and he has degrees, engineering degrees from
4 Carnegie Mellon and from Stanford. And he will be here this
5 week to testify and to tell you about 2Wire's early days of
6 innovation in the field of DSL modem technology.

7 The DSL functionality, the brains of the DSL
8 inside these black boxes is actually on a little
9 semiconductor chip, a little black chip. We can't pop this
10 open and show you the chip, but there is a little chip
11 inside here that does the DSL. Mr. Miller will explain to
12 you 2Wire's early DSL chip designs. 2Wire designed a number
13 of generations of DSL chips. They gave them interesting
14 names, Aries, Perseus, Denali.

15 2Wire got patents. 2Wire had patents on its
16 innovations in DSL technology. And 2Wire also attended the
17 standards bodies meeting. You heard Mr. McAndrews make
18 reference to standard bodies. 2Wire attended standards body
19 meetings and made contributions to those meetings in the
20 field of DSL technology.

21 Mr. Miller will tell you how during a very short
22 period of time, from around the time it was founded into the
23 early 2000s, 2Wire went from being basically a nobody, a
24 startup, to being a primary supplier of these DSL modems to
25 AT&T, one of the largest, if not the largest DSL network

1 operators in the country.

2 2Wire has been acquired a few times. You heard
3 some of those names earlier this morning, but Mr. Miller has
4 essentially stayed with 2Wire since he joined in 1999, over
5 twenty-one years.

6 I would like to talk a little bit about bonding.
7 I know you heard some of this from Mr. McAndrews. A little
8 bit of repetition here. But this is a single line DSL.
9 This is without bonding. And this animation shows the data
10 moving down the copper wire, we have here 25 megabits per
11 second, that's reasonable for single line DSL. And the data
12 gets to your modem. I'll run it again. The processing
13 modem and up pops your content.

14 Bonding is an optional technique that a DSL
15 network operator like Windstream, AT&T can use to increase
16 the bandwidth between the central office and your home.
17 It's a little bit more technical, but it's basically just
18 using two or more lines instead of one to carry data from
19 point A to point B. That's bonding.

20 And this is an animation, and there you have it.
21 Instead of our 25 megabits per second down one line, we have
22 two lines each with 25 megabits per second, we get roughly
23 50 megabits per second, essentially twice the carrying
24 capacity using bonding than you would without. The data
25 starts at the central office over on the left-hand side,

1 travels down the two lines, it gets split in the central
2 office so it's the same, here we have looks like an iTunes
3 song, the song starts at the central office, gets split, the
4 data goes down to two lines, gets reassembled in the modem
5 and up pops your content. That's basically DSL bonding.

6 I think of it a little bit like when you're at
7 the grocery store, if you have ever been at a grocery store
8 and there is a long line, one of the ways the grocery store
9 deals with that is they open up another line, half of you
10 move over to the other line and you get through it quicker
11 than if you had just that one line running. It's more
12 technical than that, but that's one way to think of what's
13 going on with DSL bonding.

14 Here is an important point, I think
15 Mr. McAndrews acknowledged this as well, TQ Delta, the
16 inventors on this patent did not invent bonding. Bonding
17 was out there, it's old technology, and TQ Delta will admit
18 that during the trial this week. TQ Delta's patent is about
19 something much more specific than DSL bonding. It's about
20 reducing the difference in the amount of time it takes for
21 the data to get down these two or more lines and reach a
22 common destination.

23 Going back to my grocery store example, if you
24 have two lines open now and they're not moving at the same
25 rate, you go to the grocery store with a friend, you go down

1 one line, your friend goes down the other and you may have
2 to wait for your friend at the end. Maybe not such a big
3 deal when you're in the grocery store unless you have a
4 small waiting area and a whole bunch of people and a bunch
5 of carts, but potentially some challenges with that for DSL.

6 And so TQ Delta has this patent that talks about
7 reducing a difference in latency between those two lines.
8 And that's really the key phrase in this patent. The claim
9 is a little bit longer than this, and you saw the claim a
10 little bit earlier. But the key phrase is reducing a
11 difference in latency between the bonded transceivers.
12 Latency is just a fancy word for the amount of time it takes
13 the data to come out of the transmitter and come through the
14 receiver, and the amount of delay involved in that process.

15 That's what TQ Delta is going to try to prove to
16 you during the trial this week, that my client's DSL modems
17 reduce a difference in latency between bonded lines using
18 their patented technique.

19 2Wire's products do not do this. That's what
20 the evidence will show this week. You will not hear any
21 evidence this week that 2Wire's products reduce a difference
22 in latency between bonded lines using the TQ Delta patent
23 compared to what the difference in latency would have been
24 without using TQ Delta's patent. I want to say that again.
25 It's a mouth full. You will not hear any evidence this week

1 that 2Wire's modems reduce the difference in latency between
2 bonded lines using TQ Delta's patent compared to what the
3 difference in latency would have been without it.

4 This is what the evidence will show. First,
5 there is not going to be a meaningful difference in latency
6 among the bonded lines in the first place. 2Wire doesn't
7 need TQ Delta's patent because there is not normally going
8 to be a meaningful difference in latency between bonded
9 lines.

10 And I want to tell you why I say no meaningful
11 difference in latency between the bonded lines, because the
12 system is built to tolerate a little difference in latency.
13 The data does not need to arrive at the destination at the
14 receiver in your home at precisely the same time. Without
15 doing anything special, I think in Mr. McAndrews' slide it
16 was purple, there is a little buffer memory there and the
17 memory can store the first arriving data while waiting for
18 the other arriving data to combine it all and produce the
19 content in your home. That's what I mean by no meaningful
20 difference in latency.

21 2Wire does not need to use TQ Delta's patent or
22 any other technique to reduce a difference in latency among
23 the bonded lines.

24 And second, in the rare instance where there is
25 a meaningful difference in latency, 2Wire does not do what

1 TQ Delta's patent requires. Instead, 2Wire's products
2 comply with the DSL standard which simply says don't bond.

3 Contrary to what you heard from Mr. McAndrews,
4 the DSL bonding standard does not require network operators
5 or my client's products to reduce a difference in latency to
6 bring the lines closer together. The witnesses that you're
7 going to hear from this week will give you much more of an
8 understanding of the technology and of what I'm saying, what
9 I have done so far, and we're confident that when you have
10 heard all of that testimony, seen all of that evidence, when
11 you go to have your deliberations, you will conclude that
12 2Wire does not infringe this patent.

13 Now, as you know by now, this case is about an
14 optional feature of DSL called bonding. Neither TQ Delta
15 nor the inventors on this patent invented bonding. They
16 also did not invent any of the transmission parameters. You
17 heard Mr. McAndrews use that term, I think he said RS coding
18 parameters. Neither TQ Delta nor any of the inventors
19 invented any of the transmission parameters that the patent
20 talks about using to reduce a difference in latency among
21 the bonded lines. This is all old technology bonding the
22 transmission parameters.

23 Now, going back to my grocery store example, as
24 I said, it's a little less than ideal that you have to wait
25 for your friend if your friend gets through the line before

1 you or vice versa. Not such a big deal.

2 In DSL, it could be a big deal. Let's
3 say you're watching a video or you want to watch a video,
4 and the data is coming through this bonded technique, and a
5 big chunk in the data arrives first. It has to be stored
6 there. And if too much of that data arrives first, your
7 memory could be overrun, and I think we saw a video from
8 Mr. McAndrews doing that.

9 So TQ Delta's patent is about
10 adjusting the settings on the bonded lines, for example,
11 slowing down the faster lines so that that first arriving
12 chunk of data doesn't arrive much before the other data to
13 be stored in that memory. But as I said, you don't need to
14 do this if there's not going to be a meaningful difference
15 in latency in the first place.

16 The evidence at this trial will show
17 that TQ Delta's patent is not needed and isn't used because
18 in normal operation the environment that 2Wire's products
19 operate in, there's not normally going to be a meaningful
20 difference in latency between bonded lines.

21 This is how bonded DSL works in the
22 real world. Sometimes the data arrives a little bit earlier
23 than the other. It doesn't have to be perfect. And it gets
24 stored in the DSL modem in that little buffer memory, and
25 then it gets combined and produced onto your screen.

1 This is Dr. Krista Jacobsen. I think
2 Mr. McAndrews referred to Dr. Jacobsen. Dr. Jacobsen is a
3 leading DSL expert, and 2Wire retained her in this case to
4 look into this question of whether the 2Wire products
5 infringe. Dr. Jacobsen studied under somebody named
6 Dr. John Cioffi at Stanford. I wouldn't expect you to know
7 who Dr. Cioffi is, but he's sort of like the Thomas Edison
8 of DSL. He's known as the father of DSL, has a lot of
9 patents on DSL.

10 And Dr. Jacobsen studied under him at
11 Stanford University, and then Dr. Jacobsen went with Dr.
12 Cioffi and they actually designed DSL modems like this. Not
13 this one, but like this. And actually Dr. Jacobsen has
14 written books on DSL, and these are two of them. These are
15 two of her books, same as what's depicted up there on the
16 slide.

17 Dr. Jacobsen ran tests on the accused
18 2Wire products in this case, the 2Wire products that are
19 accused of infringing the TQ Delta patent to see whether
20 they needed and whether they used TQ Delta's patented
21 technique. And I don't want to steal her thunder, she's
22 going to testify a little bit later this week, but her tests
23 showed no difference in latency when these products are set
24 up in the way they're used in the real world. She used the
25 real-world configurations and tested them, and she'll

1 describe to you her test results. No difference in latency.
2 No need for any technique to reduce a difference in latency.

3 I'd like to talk briefly about the
4 standard that Mr. McAndrews referred to during his opening
5 statement. TQ Delta is going to try to prove to you this
6 week that its patent is in this DSL bonding standard, and
7 therefore, everyone who does DSL bonding necessarily uses
8 and infringes the patent.

9 That's not right. The evidence will
10 show that the standard does not require the use of TQ
11 Delta's patent at all. The standard does not require
12 reducing a difference in latency among the bonded lines. As
13 Dr. Jacobsen will explain, that's just not how the standard
14 works. It doesn't require companies like 2Wire to use any
15 technique to reduce a difference in latency between bonded
16 lines.

17 This is the key language from the
18 standard. The standard itself is very long, 640 pages, I
19 believe.

20 But in clause 61, a subclause of 61, this is how
21 the bonding standard deals with a difference in latency
22 among bonded lines. It says the differential latency
23 between any two PME's, fancy acronym for the lines in an
24 aggregated group shall be no more than maxDifferentialDelay.
25 The difference shall be no more than maxDifferentialDelay.

1 So what the standard does is it picks a number. And I'll
2 just pick 25 milliseconds. And it says if the difference in
3 latency between any two or more bonded lines is greater than
4 maxDifferentialDelay, don't bond. It's basically a binary
5 decision, a black and white decision that the standard
6 makes.

7 This is how the standard protects
8 against that memory at the receiving end from being overrun
9 by too much data arriving so much earlier than other data.
10 The difference between the lines is too great, don't bond.
11 And this is TQ Delta's patent claim 17. TQ Delta's patent
12 says each of the bonded transceivers utilizing at least one
13 transmission parameter value to reduce a difference in
14 latency between the bonded transceivers.

15 So the standard says, if the
16 difference is too great, don't bond. The patent claim talks
17 about reducing the difference in the latency. These are
18 different things, as Dr. Jacobsen will explain.

19 So Dr. Jacobsen will testify, look,
20 the first question is: Do you have a difference in latency
21 that you have to deal with at all? Now, if the answer is
22 no, which is what her tests showed on the accused products,
23 you can bond.

24 Now, what do you do? What if there is
25 a meaningful difference in latency? Well, first, you can

1 use that buffer memory to store. It doesn't have to be
2 exact. The two data streams, two or more data streams do
3 not have to arrive at precisely the same time.

4 Another approach is to use the
5 standard approach. That's what 2Wire's products do. The
6 difference in latency between bonded lines is too great,
7 just don't bond. And then you have the '881 patent approach
8 which is to actually reduce the difference in the latency
9 between the bonded lines. And as I said, the evidence will
10 show that 2Wire's products do not do what TQ Delta's patent
11 claims and requires.

12 I want to make one more important note
13 about the standards body. The standards body, a group of
14 companies get together and kick around technical ideas for
15 what the standard should be, how the communication should
16 work between one company's products and another. The
17 standards body makes no determination at all as to whether
18 anybody's patent is included in the standard or not. That's
19 something that TQ Delta apparently is going to try to prove
20 to you this week, that the patent is in the standard or is
21 required by the standard.

22 Nobody has made that determination.
23 The standards body hasn't made it. Potentially that's a
24 question for you, the jury, to decide.

25 I want to talk for just a minute or

1 two about Broadcom. As I mentioned, the DSL functionality
2 in these DSL modems really occurs on a little semiconductor
3 chip. I talked earlier about the numerous generations of
4 DSL chips that 2Wire designed. But in all the accused
5 products, in 100 percent of the products that we're going to
6 be talking about this week that TQ Delta accuses of patent
7 infringement, 2Wire, my client, just buys that semiconductor
8 chip, that DSL chip from Broadcom.

9 Maybe you've heard of Broadcom.
10 They're a very large semiconductor company, very large chip
11 company.

12 Now, one way to understand how a chip
13 like that works is to look at something called the source
14 code. Source code is defined generally as humanly readable
15 understandable instructions that describe how the chip
16 operates. Humanly understandable might be an exaggeration.
17 Source code can be difficult to read, but that's what source
18 code is.

19 And both sides in this case have hired
20 experts, source code experts to look at the Broadcom source
21 code that runs on the chips in these boxes, and both of them
22 are going to testify at this trial. I'll introduce to you
23 2Wire's expert. This is Dr. Martin walker. He has a
24 bachelor's degree from MIT. He's got his master's and his
25 Ph.D. from Stanford in electrical engineering and computer

1 science.

2 Dr. Walker examined the Broadcom
3 source code. Broadcom made it available for both parties in
4 this case. Dr. Walker examined the source code on the
5 chips, and he also examined Dr. Almeroth, TQ Delta's expert,
6 Dr. Almeroth's analysis of that source code.

7 And Dr. Walker will testify here this
8 week that based on his analysis, the Broadcom source code
9 does not operate to reduce any difference in latency between
10 the bonded channels. It's just not in there.

11 Now, as I mentioned, this is
12 Broadcom's source code. It's not 2Wire's source code. And
13 so the parties took a deposition of Broadcom prior to this
14 case, prior to the trial. You heard the judge talk about
15 depositions, testimony under oath, but prior to the trial.

16 And Broadcom put up as a witness a Dr.
17 Gong-San Yu. Dr. Yu is a distinguished engineer. That's
18 his title at Broadcom. And Dr. Yu manages the entire group
19 at Broadcom that's responsible for the DSL chips that are in
20 2Wire's products. That's his group that designs these
21 chips. And he testified at the deposition, and you will
22 hear some of that deposition testimony this week, but I'll
23 just highlight for you two things that he said in his
24 deposition.

25 First, he said the bonded lines will

1 naturally have similar latencies. That's what the designer
2 of the chips inside these boxes said under oath at his
3 deposition.

4 And the second thing he said is that
5 each of the bonded lines determines the transmission
6 parameter settings independently of any other bonded line.
7 So bonded line one, trends up, sets its transmission
8 parameters, Line 2, does that independently of line 1
9 separately.

10 As I said, you will see Dr. Yu, not live in
11 person, but on the screen a little bit later this week.

12 I do want to address briefly the
13 question of invalidity. As you heard in the patent video,
14 invalidity is a defense to patent infringement, and indeed,
15 the evidence this week that we intend to present will show
16 that TQ Delta's patent is not even valid.

17 On the left-hand side of this screen,
18 you have the patent prosecution process. In the video,
19 Judge Fogel talked about this. This is the way that the
20 patent is issued. The applicant applies for a patent.
21 There's back and forth with the patent examiner. And in
22 this case, of course, we know the patent was issued.

23 Here's the important point. Nobody
24 else gets to participate in that process other than the
25 applicant and the patent examiner, the Patent Office. My

1 client, 2Wire, now accused of infringing this patent, did
2 not get to participate in that process, did not have any say
3 in that process.

4 So we have on the right-hand side is
5 the legal system, the jury system, what we're here doing
6 this week. And this is the first time that anybody gets to
7 hear both sides of the story. Additional prior art that was
8 not considered or prior art that may have been put before
9 the patent examiner, you, the jury, get to decide whether
10 this patent is valid or not.

11 And 2Wire this week intends to prove
12 to your satisfaction using the standards that the judge has
13 given and will give you that TQ Delta's patent is not even
14 valid.

15 There's an important point here. It's very
16 important that you can only get a patent in our system on
17 something that is new and non-obvious.

18 And those are the phrases that you
19 heard in the patent video, and there's a very important
20 reason for that. A patent gives the patent owner a right to
21 exclude. You heard Mr. McAndrews say that as well.

22 If somebody could get a patent on something that
23 is not new and non-obvious, something, in other words, in
24 the prior art, something that's out there already, they
25 would be able to use that patent to exclude people from

1 doing something that's already been done prior to the time
2 of the patent.

3 And that's really why we have the
4 invalidity defense. The evidence in this trial will show
5 that claims 17 and 18, the two asserted claims of TQ Delta's
6 patent, are invalid. The patent has over 40 claims. I
7 think it's 42 claims. Two of those claims, the two that are
8 being asserted here at this trial, the evidence will show
9 are invalid. What's described in these two claims, 17 and
10 18, was already out there in the public long before TQ
11 Delta's patent was filed.

12 Again, TQ Delta does not even claim to
13 have invented bonding, and they also did not invent any of
14 the transmission parameters, the transmission parameter
15 values that the patent claim talks about using to reduce a
16 difference in latency among the bonded transceivers. All of
17 those key pieces of technology existed in the prior art.
18 And I think what I heard Mr. McAndrews say was that the
19 inventors came up with a clever way to use existing
20 transmission parameter values to reduce a difference in
21 latency among bonded lines.

22 As Dr. Jacobsen will explain, the
23 prior art already showed how to use transmission parameters
24 to reduce a difference in latency among bonded lines.
25 Dr. Jacobsen will discuss this prior art in more detail with

1 you than I'm doing here. And when you go back and have your
2 deliberations later this week, we will be asking you to find
3 that the two claims of the '881 patent are invalid.

4 So I'll wrap up my opening statement
5 now. 2Wire greatly appreciates your service and your time
6 here this week. This is a very important case to my client,
7 2Wire and indeed to the DSL industry. As you heard, TQ
8 Delta claims that this patent is in the standard.

9 On the infringement question you're
10 going to be asked to decide, the evidence will show that
11 2Wire's products do not do what is said in claims 17 and 18.
12 They do not infringe the patent. They do not need to do
13 what the patent claims, and they don't use it.

14 As I mentioned earlier, when you go
15 back to do your deliberations, the evidence will not have
16 shown any actual reduction in a difference in configuration
17 latency in my client's products. No actual reduction in a
18 difference in configuration latency in my client's products.
19 My client's products don't infringe claim 17 or 18. And as
20 I just said, the evidence will also show that those two
21 claims are not even valid, and Dr. Jacobsen will explain
22 that to you in more detail later this week.

23 Thank you.

24 THE COURT: All right. Thank you,
25 Mr. Schuman.

1 So members of the jury, we'll break for lunch
2 now. It's five of 1:00, so we'll start again at five of
3 2:00.

4 All right?

5 (Jury leaving the courtroom at 12:55 p.m.)

6 THE COURT: All right. So we'll be in recess
7 until five of 2:00.

8 THE CLERK: All rise.

9 (Luncheon recess was taken.)

10 DEPUTY CLERK: All rise.

11 THE COURT: All right. Are we ready to go?

12 MR. PAUL McANDREWS: Yes, Your Honor.

13 THE COURT: All right. Let's get the jury.

14 (Jury entering the courtroom at 1:57 p.m.)

15 THE COURT: All right. Members of the jury,
16 welcome back. Everyone, you may be seated.

17 Mr. McAndrews.

18 MR. PAUL McANDREWS: Thank you, Your Honor. TQ
19 Delta calls its first witness, Mr. Marcos Tzannes.

20 DEPUTY CLERK: Please state and spell your full
21 name for the record.

22 THE WITNESS: Marcos Tzannes, T-Z-A-N-N-E-S.

23 DEPUTY CLERK: Do you prefer to swear?

24 THE WITNESS: Sure.

25 DEPUTY CLERK: Okay. Please place your left

Tzannes - Direct

1 hand on the Bible and raise your right hand.

2 Marcos Tzannes, after having been duly sworn
3 under oath, was examined and testified as follows:

4 DEPUTY CLERK: Thank you.

5 DIRECT EXAMINATION

6 BY MR. PAUL McANDREWS:

7 Q. Good afternoon, Mr. Tzannes.

8 A. Hello.

9 Q. We certainly know each other, and I know you were
10 just sworn in, but would you please say your full name for
11 the record?

12 A. Marcos Tzannes.

13 Q. And what's your current address, Mr. Tzannes?

14 A. 1943 Castle Drive, Palo Alto California.

15 Q. And Mr. Tzannes, do you understand why you've been
16 called to provide testimony in this case?

17 A. Yes, it's because I'm the inventor on the patent in
18 this case.

19 Q. And generally what does the technology of this patent
20 relate to?

21 A. It relates to a technology called Digital Subscriber
22 Line which stands for DSL. And it is the technology that
23 enables sending very high-speed data into telephone lines to
24 people's homes.

25 Q. Thank you.

Tzannes - Direct

1 Are you the inventor of any other patents
2 related to DSL, Mr. Tzannes?

3 A. Yes. I've been working on DSL for over 25 years, and
4 I have over a hundred patents. I'm the inventor of over a
5 hundred patents on DSL. DSL has been pretty much my life's
6 work.

7 Q. Thank you, Mr. Tzannes.

8 We'll get into more detail about the specifics
9 of the patent that's at issue in this case, but before we do
10 that, you mentioned that DSL's been your life's work so I'd
11 like to discuss a little bit your background.

12 Is that okay?

13 A. Sure.

14 Q. Now, please give us a brief history of your education
15 after your high school years, Mr. Tzannes.

16 A. So I first went to the University of Central Florida,
17 and I got a bachelor's degree in electrical engineering
18 graduating with honors magnum cum laude, and then I went to
19 the University of California Berkeley to pursue a Ph.D.
20 This was in 19 -- so I graduated in 1990 with a bachelor's
21 and then I went to Berkeley under a National Science
22 Foundation fellowship.

23 Q. Sorry. What year was your bachelor degree,
24 Mr. Tzannes?

25 A. 1990. 1990.

Tzannes - Direct

1 Q. And what is the National Science Foundation
2 fellowship?

3 A. It's a scholarship that is given to -- it's a
4 merit-based competitive thing that's geared to engineers to
5 get a portion of their Ph.D. It's like -- it's kind of like
6 a full ride for nerds, you know, to get to go to school and
7 to get -- to get a Ph.D. It pays for your tuition, your
8 room and board, and everything.

9 Q. Thank you.

10 Did you have any specific area of focus while
11 studying for your master's degree?

12 A. I studied digital communication systems like DSL.

13 Q. And where did you first work after completing your
14 education, Mr. Tzannes?

15 A. I worked at a small startup called Aware, and it was
16 actually just a summer job, I was still in school when I
17 went there, and it was in Boston, Massachusetts.

18 Q. Now, after you did your summer internship at Aware,
19 did you continue your graduate studies?

20 A. No, I didn't. Actually, the summer job kind of
21 changed what I ended up doing as a path in my life. I
22 actually realized that I enjoyed building things more than
23 being in school. And so I eventually did go back and
24 quickly completed a master's, but I dropped out of the
25 program, gave up my scholarship. My mom and dad were not

Tzannes - Direct

1 happy, but it turned out to be the right move for me because
2 I ended up working for Aware for 20 years, and we built this
3 DSL technology that kind of enabled the Internet revolution.

4 Q. Thank you.

5 When did you join Aware full time, and what did
6 you do when you first got there?

7 A. Well, I started off the DSL group and ended up hiring
8 a bunch of people that were -- ended up being this team that
9 I talked about that worked on DSL with me for the next
10 20 years.

11 Q. You've used the term DSL, and I think you said it was
12 Digital Subscriber Line. Again, high level, what is DSL?

13 A. So DSL is a technology that enables you, as I said,
14 to transmit high-speed data over standard telephone lines.
15 And the reason why this is very hard is because these phone
16 lines were built and installed many, many years ago, and
17 they were only intended for -- to make phone calls. So to
18 transmit, you know, video or Internet over these phone lines
19 is very, very hard. And so there's lots of very complicated
20 single processing and communication algorithms that you
21 needed to do to actually make that work, and that's what
22 Aware specialized in.

23 Q. And what are the typical uses of DSL, Mr. Tzannes?

24 A. Well, DSL is used for Internet access for video.
25 It's used for broadcast TV. It's used for everything today.

Tzannes - Direct

1 Q. In the early '90s when you started working with DSL
2 founding Aware's DSL group, as you've said, had the Internet
3 yet taken off?

4 A. No.

5 Q. And by the late '90s what had happened with Internet
6 usage as it relates to DSL?

7 A. Yeah. Well, that's when kind of it exploded, and DSL
8 was -- was one of the main and still is the main way of
9 getting Internet access to your home. There's probably over
10 500 million people in the world that get Internet access
11 through DSL.

12 Q. Thank you.

13 What types of products or services did aware
14 offer relating to DSL?

15 A. So what we did at Aware was build the -- kind of the
16 heart of the DSL transceiver modem, some people call it,
17 using these different -- you hear these different words, but
18 it's the part of the DSL system that does all the complex
19 math and algorithms that enable you to send high-speed data
20 over a phone line.

21 Q. Were there different versions of DSL that you worked
22 on during your time at Aware?

23 A. Yeah, because we were technology providers and
24 leaders, we usually worked or always worked on the latest
25 versions of everything. So we worked on ADSL2 which was the

Tzannes - Direct

1 most massively deployed DSL service, and that was something
2 that gave you 20 megabits. That came out in the mid-'90s,
3 and we were the first to market with that.

4 And then we developed -- we developed this, the
5 VDSL2 standard which came out later. It gave you over 50
6 megabits. That's, for example, for what AT&T uses for their
7 universe products and service.

8 Q. Thank you.

9 If you'd turn in your notebook, Mr. Tzannes, to
10 PTX 0737. What does this depict?

11 A. It's a picture from the old days at Aware.

12 Q. Thank you.

13 MR. PAUL McANDREWS: Your Honor, I move for
14 admission of PTX 737.

15 MR. SCHUMAN: No objection.

16 THE COURT: Admitted without objection.

17 MR. PAUL McANDREWS: Throw it up on the screen,
18 please, David.

19 BY MR. PAUL McANDREWS:

20 Q. Again, I'm sorry, Mr. Tzannes. Could you describe a
21 little what this picture depicts?

22 A. Yeah. This is a picture of the team that we had at
23 Aware, all the ladies and gentlemen that worked on these
24 products. I'm way in the back. You probably can't see me.
25 A lot more hair back then.

Tzannes - Direct

1 Q. What's the primary occupation of these people
2 depicted in this?

3 A. They're engineers. Almost all of them are engineers
4 that worked on DSL technology.

5 Q. Okay. Thank you, Mr. Tzannes.

6 What did Aware customers do with Aware's, I
7 think you called them, transceiver designs once they
8 received them from Aware?

9 A. So our customers were semiconductor chip companies,
10 big semiconductor chip companies that buy our designs and
11 then use those designs to manufacture or fabricate chips in
12 Taiwan, or China, the U.S. And then -- and so many of those
13 companies did not have the in-house expertise that we had,
14 so they would come to us because by buying our designs, they
15 could get a chip out much quicker than they did on their
16 own. It would take them probably years to do on their own.
17 With us, they could get it done in less than one year.

18 Q. Who were some of these DSL customers at Aware at your
19 time there?

20 A. We worked with a lot of the major semiconductor
21 companies: Intel, AMD, Lucent, Infineon, Siemens, AMC. I
22 mean, a lot of them.

23 Q. Thank you.

24 What else did Aware do regarding DSL during your
25 time there?

Tzannes - Direct

1 A. Well, because we were a technology company, we
2 innovated and came up with new ideas, and we were awarded
3 patents for those ideas.

4 Q. What were your job responsibilities primarily during
5 your time at Aware as it relates to DSL?

6 A. Well, I -- I led the original team that did the DSL
7 designs, and so I was a designer in four generations of DSL
8 transceiver designs. And my job was a lot of the software
9 and algorithms that read on the chips.

10 Q. Did you have any other roles at Aware during this
11 time relating to DSL?

12 A. Yes, I also attended the standards meetings, the ITU
13 and IEEE standard meetings that specify how DSL devices
14 work.

15 Q. Now, you just mentioned standards meetings, and one
16 of those was the ITU. What specifically is the ITU,
17 Mr. Tzannes?

18 A. The ITU stands for the International
19 Telecommunications Union, and it's part of the United
20 Nations. So what happens in these standard meetings is
21 they -- we specify how the devices operate, communication
22 devices operate in particular. So if you think about it, in
23 order for two communication devices to operate with each
24 other by different manufacturers, they have to operate the
25 same way so your Samsung phone can talk to your Apple phone.

Tzannes - Direct

1 (JTX 001 was admitted into evidence.)

2 MR. PAUL McANDREWS: Okay. Can you please throw
3 it up there on the screen for me, David?

4 Thank you.

5 BY MR. PAUL McANDREWS:

6 Q. Okay. Once again, Mr. Tzannes, what are we looking
7 at here in JTX 001?

8 A. So this is the '881 patent. It's the bonding patent
9 that is at issue in this case, and I'm the inventor. Can
10 you see my name, Marcos Tzannes there. So you probably
11 can't see it actually, but Ed Reiter and Chris Cahill, so
12 those are -- these are colleagues of mine at Aware who are
13 co-inventors on this patent.

14 Q. And in general, Mr. Tzannes, what is the technology
15 at issue in your patent that is also the subject matter of
16 this case?

17 A. It is related to a technology called bonding in DSL
18 and bonding is or DSL bonding when you take, well, a second
19 phone line, you normally use one phone line in a person's
20 hoe. You take a second phone line, and you use that phone
21 line to increase the data rates that you can have for
22 Internet access or whatever other service you're buying.

23 Q. Why was there an interest in doing this with phone
24 lines, Mr. Tzannes?

25 A. Well, I mean, there's a huge advantage to be able to

Tzannes - Direct

1 use the existing phone infrastructure from telephone
2 companies. They don't have to be replaced and put in new
3 installed fibers, something like that, so they can just use
4 the existing phone lines. But as I said, the hard part is
5 the phone lines were never intended to be used that way.

6 Q. Thank you.

7 And with respect to your invention of the '881
8 patent, how did you come up with the invention?

9 A. So this is back in the -- out of the summer, fall of
10 2001, I believe, yeah. And Chris Cahill, and Ed Reiter, and
11 I were aware of the availability of a second phone line in
12 many homes, and we also know that a lot of the old bonding
13 technology didn't really work in the real world. It -- it
14 was restricted to only being able to have the same exact
15 data rate on two phone lines. And in the real world, that
16 just never happens.

17 The phone lines coming into people's homes have
18 different data rates because the network is old. The phone
19 lines have -- you know, are going through different routes
20 to people's homes. There's interference. So we knew that
21 we wanted to have a new standard that would actually address
22 having different data rates. And the additional problem
23 that comes up when you have different data rates is you have
24 different latencies or delays, and you're going to hear this
25 term a lot, latency, delay, the same thing.

Tzannes - Direct

1 And we had to deal with the issue of what's
2 known as differential delay or differential latency in a
3 bonding system.

4 Q. Thank you, Mr. Tzannes.

5 Why don't we briefly at least walk through some
6 of the figures. Could you please pull up, if I go one in
7 Figure 1 in JTX 0001?

8 Mr. Tzannes, what does Figure 1 depict in the
9 your patent here?

10 A. Figure 1 is what's known as the prior art, so it's
11 like the old stuff, what was done before. And this shows
12 what happens when you only have one phone line, you're not
13 using bonding. So this is the way we show what was previous
14 ways of doing it.

15 Q. And as we look at this, what is the large block
16 diagram on top labeled as the access node?

17 A. So, yeah. This is a block diagram. So what that
18 means is every block. You can think of it as like a device
19 somewhere. So this access node is the piece of equipment
20 that is inside a -- inside a telephone company's central
21 office. And on the left, you'll see where it says ATM core
22 network, a little cloud. That's how the Internet was
23 receiving data from there.

24 And then it goes through the whole system. It
25 comes out on the right where the telephone lines are. So

Tzannes - Direct

1 you see one, two, those are -- those numbers there on the
2 far right, those are telephone lines that are going to
3 people's homes.

4 Q. Thank you, Mr. Tzannes.

5 And you were here for the opening statements, I
6 believe. Did counsel use other words that you heard for the
7 access node?

8 A. Yes. There's a lot of words, unfortunately, that
9 they use. Yeah. It's -- it can be called the DSLAM.
10 That's another word people use for it.

11 Q. Okay. If you direct your attention to the bottom
12 block of Figure 1, and if you wait until we call that up.
13 That whole block, please, David. Thank you. Perfect.

14 What is depicted in the bottom block here,
15 Mr. Tzannes?

16 A. So this is the -- this is now gone over the phone
17 line. It's coming into a person's home, and this is the
18 block, the box that's inside your house. You'll hear it be
19 called the modem or the transceiver. And this is the --
20 this is the device that receives the data from the telephone
21 company. And then on the left is the phone line coming in,
22 and on the far right, it goes into your -- you know, your
23 television, or your computer, or whatever you're trying to
24 do.

25 Q. Now, is this Figure 1 depiction of the prior art, is

Tzannes - Direct

1 this a figure disclosing bonding?

2 A. No.

3 Q. A bonding configuration?

4 A. No, this is a single phone line.

5 Q. Okay. And the broadband network termination block
6 there, is that also known as a CPE, customer premises
7 equipment?

8 A. Yeah. Yes, known as a CPE modem or transceiver
9 sometimes, too.

10 Q. Thank you.

11 MR. PAUL McANDREWS: If you'd go forward to
12 Figure 2, please, David.

13 BY MR. PAUL McANDREWS:

14 Q. Mr. Tzannes, what is depicted in Figure 2 here?

15 A. So now we get into an example of bonding. So in this
16 case, the pictures are the same, but there's a difference in
17 the two phone lines are used to go into the -- you know, the
18 customer's home. So you see there's two arrows at the
19 bottom there, now the two phone lines coming in. And at the
20 top, there's two phone lines that are coming out of the
21 central office that are going to the same -- the same user.

22 Q. And are there any additional blocks within these
23 larger blocks that enable bonding to happen?

24 A. Right. So the one thing that's different if you look
25 right in the middle there, there's in the middle the access

Tzannes - Direct

1 node on top. You see there's 140. It's called 140. Yeah,
2 that right there. That's the -- that's called a multi-pair
3 multiplexer or mux. And that is the function that splits.
4 So if you have a big stream coming to your house, it splits
5 the stream of the two data paths to go to the two phone
6 lines. So you can split it to go to two phone lines.

7 And then on the other side, you have the
8 equivalent receiver function which is on the bottom box.
9 You see it's 220, and that's the multi-pair mux or demux.
10 So that's taking in the two phone line data, and it's
11 reassembling back into the user stream so you can -- so you
12 can get your content.

13 Q. Thank you, Mr. Tzannes.

14 Let's go forward to Figure 4. Once we get that
15 up there, I'd like to ask you about it. All right.

16 Mr. Tzannes, that's Figure 4 in your patent.
17 What is depicted there?

18 A. So this is a kind of highlighted how the multi-pair
19 mux works. So on the left side, you have the data that is
20 coming from the Internet or from somewhere else, and it's
21 being sent to the user. And you see that you have kind of
22 data on one, two, three. You can think of those as packets
23 or whatever data.

24 And then they're split. That little -- that
25 little thing that has an arrow there is moving kind of

Tzannes - Direct

1 between the different phone lines. So the first set of data
2 goes on the phone line number one. The second set of data
3 goes on phone line number two. The third set of data goes
4 on phone line number three. And then you come back and the
5 fourth set of data goes back on phone line number one.

6 Now, this is an example with three phone lines.
7 It's just an example. You know, typically -- actually, it's
8 -- two phone lines are used in the most common scenario in a
9 person's home.

10 Q. Thank you, Mr. Tzannes.

11 Why don't we move ahead to Figure 7. And once
12 we get there, I'd like to ask you about it.

13 Now, what is depicted in Figure 7, Mr. Tzannes?

14 A. So if you see, it says this is the Mux receiver. So
15 it looks the same, but it's not because actually the data is
16 coming in from the right side now. So this is -- so it's
17 coming in from the three phone lines on the right. This is
18 what's happening inside your house.

19 So the bits are now received or the data is
20 received one, two, three on the different phone lines. And
21 if you see the arrow on the far left there, that's showing
22 how it's going to the user, and so it's reassembled in the
23 correct order one, two, three, four after the -- the
24 demultiplexer.

25 MR. PAUL McANDREWS: Okay. Can we go back to

Tzannes - Direct

1 Figure 5, please, David?

2 BY MR. PAUL McANDREWS:

3 Q. All right. Mr. Tzannes, what's depicted in Figure 5
4 of JTX 0001?

5 A. Yeah. So this -- now we're getting to how actually
6 bonding works in the real -- real world. This is an example
7 of bonding where the data rates are different on the
8 different phone lines, and that's really the -- one of the
9 primary aspects of what we were looking at is how do you
10 deal with a case where the two phone lines, like happens in
11 reality, are not -- do not have the same data rate. The top
12 phone line has a data rate that's twice, twice as fast as
13 the bottom phone line.

14 So you see the first two sets of data one and
15 two go to the top phone line because it's going twice as
16 fast. And the bottom phone line only gets three, number
17 three.

18 Now, the top phone line gets four and five, and
19 the bottom phone line only gets six. So this is an example
20 of the unequal data rates that happens when you're deploying
21 real DSL.

22 Q. Thank you.

23 So in addition for accounting for different
24 lines having different data rates, what other problems did
25 your patent address, Mr. Tzannes?

Tzannes - Direct

1 A. Okay. Yeah. So the other problem is this issue of
2 latency or delay, and one way to explain what latency and
3 delay is, as I described in the patent, is you have -- when
4 you're about to send data because you're sending it over a
5 phone line, that wasn't intended to actually be used to
6 transmit data. You need to prepare that data or process it
7 in order to handle whatever happens on that phone line,
8 noise, bad channel conditions. And that preparation, the
9 processes you need to -- to get it ready to go up to be
10 transmitted takes time. And that's -- you typically call it
11 delay, configuration delay, the amount of time it takes the
12 processes that are used to do this. The big ones are
13 interleaving and Reed Solomon Coding. Interleaving and Reed
14 Solomon Coding, the amount of time that it takes to do that
15 which is called delay is a problem when you deal with
16 bonding.

17 Q. And how does latency or delay impact the bonding of
18 phone lines?

19 A. Well, in phone lines, as you can imagine, data rates
20 are different. The processing that's required to transmit
21 the data over these different phone lines and the delay that
22 results from that processing will be different as well. And
23 because the delay is different, when you send number one on
24 the one phone line and number three on the second phone
25 line, number one may arrive much sooner than number three.

Tzannes - Direct

1 And if number one arrives much sooner than number three, the
2 transceiver on the other side has to store one, two, four,
3 five. Has to store all those other bytes that are coming in
4 while it's waiting for all this other data while -- while
5 it's waiting for number three.

6 And that storage of a memory is a big deal.
7 Having storage, having large buffers in these transceivers
8 is something that costs a lot, and it's a big design problem
9 in DSL transceivers.

10 Q. Thank you.

11 And then how does your patent solve this problem
12 of a difference in latency between the two bonded lines,
13 Mr. Tzannes?

14 A. So we figured out a way to redesign some of the
15 algorithms or design some of the algorithms in the system so
16 that we would use the Reed Solomon Coding and interleaving
17 parameters to constrain them in such a way where you reduce
18 the difference in delay so that, you know, number one and
19 number two by sort of arriving at the same time, not
20 exactly, but around the same time as number three. And by
21 putting this constraint, we reduced the difference in delay
22 between the phone lines and reduce the buffer sizes that
23 were needed at the receiver.

24 Q. Thank you, Mr. Tzannes.

25 When did you first file your patent application

Tzannes - Direct

1 that resulted in the '881 patent?

2 A. It was in October of 2001.

3 Q. And what did you do after you filed your patent
4 application?

5 A. We went to the ITU which is the standards body I was
6 telling you about, and we proposed to start a new project
7 that would standardize this type of bonding so that it could
8 be used in public networks and new services.

9 Q. Thank you, Mr. Tzannes. I'll direct your attention
10 to JTX 0127 in your notebook, Mr. Tzannes.

11 And if you could very briefly identify what that
12 is.

13 A. This is the proposal that we made to the ITU.

14 MR. PAUL McANDREWS: Your Honor, I move to admit
15 JTX 0127 into evidence.

16 MR. SCHUMAN: No objection.

17 THE COURT: Admitted without objection.

18 (JTX 0127 was admitted into evidence.)

19 MR. McANDREWS: Thank you. Please publish JTX
20 127. Thank you.

21 BY MR. PAUL McANDREWS:

22 Q. Mr. Tzannes, first of all, is that your name down in
23 the left-hand corner of JTX 0127?

24 A. Yes.

25 Q. It is.

Tzannes - Direct

1 MR. PAUL McANDREWS: And if you can pull that
2 back now, David, at least the call-out.

3 BY MR. PAUL McANDREWS:

4 Q. Please describe for me what's in JTX 0127.

5 A. Yeah, so the proposed -- it says it's a proposal to
6 start G.bond which is a multi-pair, ADSL that -- a proposal
7 to start a new project to standardize bonding for ADSL in
8 particular. And the author is Aware. If you see at the top
9 there, that's my company. And then one of our customers
10 supported our idea, AMD, so they co-signed as well.

11 Q. And this was a proposal to start this standard at the
12 ITU, the standard setting body --

13 A. Yes.

14 Q. -- you mentioned earlier?

15 A. Yes.

16 Q. Thank you.

17 Did you play any role with the ITU as it relates
18 to the bonding standard?

19 A. Yes. So after I made the proposal to the ITU, I was
20 selected to actually chair the committee. They call it the
21 rapiture. It's a fancy French word for being the chairman
22 of the committee that leads discussions and tries to make
23 sure the standard gets done as quickly as possible, you
24 know, and helps -- helps try to get a good standard done for
25 the industry.

Tzannes - Direct

1 Q. And how long did you serve as the chairman of the
2 bonding committee?

3 A. For four years.

4 Q. Is there a reason that you stopped being the chair of
5 the bonding?

6 A. Yes, it was until the standard was done. It takes --
7 believe it or not, it takes four years to develop a new
8 standard. So it took us four years to get the new standard
9 out, and so it was in 2005 I think is when the new standard
10 that was developed came out.

11 Q. So you were the chairman of this bonding committee
12 from first proposal through adoption of the standard?

13 A. Correct.

14 Q. Thank you.

15 Why were you interested in standardizing the
16 bonding improvements that you had come up with?

17 A. Well, as I mentioned before, the old bonding
18 technology that existed before ours didn't handle certain
19 problems that we had solved, the problem of addressing
20 different data rates and the problem of differential delay.
21 And so we started the project because we thought that if
22 those problems were solved, then the bonding could be used
23 in real deployments in DSL.

24 Q. Now, when did you disclose your new bonding idea
25 specifically to the committee?

Tzannes - Direct

1 A. Oh, my. Yeah, the bonding ideas, I don't remember
2 the exact date or the exact meeting the ideas in the patent,
3 but it's early on in the discussion. So I led the
4 discussions so I shared with the other members the idea that
5 we had from the patent. I explained how we could design a
6 bonding standard that actually had different data rates and
7 handles differential delay issue that we've been talking
8 about.

9 Q. Now, Mr. Tzannes, you were here during the opening
10 statements and you heard counsel for 2Wire state that the
11 DNA standard simply says don't bond if the differential
12 delay is too large. As the chair, as the chairman of that
13 committee, is that what you developed with the bonding
14 standard?

15 A. No. I mean, you would never develop a standard that
16 has a solution to not work. So that's basically saying if
17 the differential delay is too big, don't bond. So then what
18 happens? In fact, that actually represents what was
19 happening in the old technology that we were trying to fix.
20 That didn't work.

21 So the new technology that's in the standard is
22 the one that actually uses this reduction of differential
23 delay to actually bond and doesn't have a no-bond option.

24 Q. Thank you, Mr. Tzannes.

25 When did you stop working for Aware?

Tzannes - Direct

1 A. In 2012.

2 Q. And what did you do after you left your work at
3 Aware?

4 A. I started a small business with my brother, Michael
5 Tzannes, who was actually one of the founders of Aware, and
6 he -- he has a Ph.D. in electric engineering. He's an
7 inventor on many DSL patents as well, and we started this
8 business to do engineering technical consulting for
9 technology development and patent development.

10 Q. Sorry. What's the name of that company, Mr. Tzannes?

11 A. It's called Tzannes Patent Management.

12 Q. And has Tzannes Patent Management done work for TQ
13 Delta?

14 A. Yes. TQ Delta -- since we were founded, TQ Delta has
15 many of my patents, and so they -- so if -- TQ Delta has
16 been our primary -- our primary customer over the past
17 several years.

18 Q. Thank you.

19 What types of work have you done for TQ Delta,
20 Mr. Tzannes?

21 A. So we do three types of -- three different. It falls
22 in three different areas. One of the areas is technology
23 development. So we continue to go to standards bodies,
24 develop new technology, continue to invent and make
25 proposals to the standards bodies. We -- we make a -- made

Tzannes - Direct

1 a proposal more recently to -- for a new version of DSL that
2 would be lower power, kind of a green version of DSL to save
3 power and energy and something that was adopted by the
4 committee.

5 Q. And roughly how many standards meetings have you
6 attended on behalf of TQ Delta?

7 A. Probably 30 standards meetings. They're week-long
8 meetings.

9 Q. Thank you.

10 Now, you said you work in three different areas
11 for TQ Delta. You described the first one as inventions,
12 technology development standards participation. What's the
13 second activity?

14 A. The second activity is in -- so we help with the
15 patent prosecution. So patent prosecution you heard from
16 the video. It's like when you get a new patent in front of
17 the Patent Office, there's an exchange with the Patent
18 Office to -- to discuss the technology. And I help the
19 lawyers because I'm the inventor on many of the patents,
20 help the lawyers with that process.

21 TQ Delta has hundreds of patents in the U.S. and
22 all over the world, and so I help them with explaining to
23 different Patent Offices, you know, however the technology
24 works, and why it's patentable.

25 Q. And how about your third area of work for TQ Delta,

Tzannes - Direct

1 what was that?

2 A. It's in -- it's in basically technical support for
3 licensing because TQ Delta licenses their patents and
4 licensing and sometimes litigation. So in licensing when
5 you license technology a lot of times you need to interact
6 with other engineers and who you're licensing technology to,
7 and you need to explain how the technology works. And I
8 help with that.

9 Q. And Mr. Tzannes, you said you worked primarily for TQ
10 Delta with Tzannes Patent Management over the last
11 six-and-a-half, seven years?

12 A. Yes.

13 Q. Is that right? And you've done that with your
14 brother. I assume you have not done that work for free; is
15 that correct?

16 A. No. We run a small business. So yeah. No, we're
17 paid for the work.

18 Q. Are you being paid to testify today, Mr. Tzannes?

19 A. No, I'm not.

20 Q. Do you have any financial interest in the outcome of
21 this litigation?

22 A. No, I do not.

23 MR. PAUL McANDREWS: Thank you, Mr. Tzannes. I
24 have no further questions.

25 THE COURT: All right. Thank you,

Tzannes - Cross

1 Mr. McAndrews. Cross-examination.

2 MR. SCHUMAN: Yes, Your Honor.

3 CROSS-EXAMINATION

4 BY MR. SCHUMAN:

5 Q. Good afternoon, Mr. Tzannes.

6 A. Hi.

7 Q. Let's start with an easy one. You didn't invent DSL;
8 right?

9 A. No. And I have no claim to have done that.

10 Q. And I heard you mention something called the ADSL
11 standard during your direct testimony. Neither you nor
12 Aware invented ADSL, either; isn't that right?

13 A. ADSL?

14 Q. ADSL.

15 A. No.

16 Q. That was not Aware's invention?

17 A. No.

18 Q. Correct?

19 A. No, no one's invented ADSL.

20 Q. Same thing. You mentioned the VDSL. The VDSL
21 standard, that wasn't Aware or your invention, either;
22 right?

23 A. No.

24 Q. And you were here for my opening statement. So
25 bonding, bonding -- you didn't invent bonding, either;

Tzannes - Cross

1 correct?

2 A. Well, there were old versions of bonding before the
3 one that we invented. Those didn't really work in -- in --
4 for DSL. So we invented a version of bonding that can
5 describe -- that actually works in real DSL networks.

6 Q. DSL bonding was out there in the prior art at the
7 time you came up with your idea for the '881 patent; right?

8 A. Like I said, there were old versions of bonding, but
9 they didn't work really.

10 Q. Thank you.

11 And you also didn't invent any of the
12 transmission parameters that are referenced in claim 17 of
13 your patent that's in your binder JTX 1 or PTX 1; correct?

14 A. Invent transmission parameters, no, I did not invent
15 those.

16 MR. SCHUMAN: So Matt, can we put claim 18 on
17 the screen, please? PTX 1. Blow that up.

18 BY MR. SCHUMAN:

19 Q. So this is the second of the two claims that TQ
20 Delta's asserting in this case. It references something
21 called a Reed Solomon Coding parameter value. You didn't
22 invent that; right?

23 A. Well, what I invented is the entire claim. So the
24 claim uses Reed Solomon Coding parameters. Actually you're
25 not showing the entire claim because there's another -- this

Tzannes - Cross

1 depends on claim 17, so...

2 Q. Right. I'm sorry. My question was a little bit
3 narrower than that, though.

4 A. Yeah.

5 Q. Reed Solomon Coding parameters, you know what those
6 are; right?

7 A. Yeah, I do.

8 Q. And you didn't invent Reed Solomon Coding parameters,
9 did you?

10 A. I did not, no.

11 Q. And interleaver parameters, you didn't invent those
12 either; right?

13 A. So we can go through all these if you want to
14 trivialize my invention by pointing out the things I didn't
15 invent. I didn't invent that, no.

16 Q. Coding parameters, you didn't invent those either;
17 right?

18 A. No.

19 Q. Code word size, you didn't invent that either; right?

20 A. The size of a code word? No, I didn't invent that.

21 Q. And framing parameters, those were out there in the
22 prior art as well, you didn't invent those either; correct?

23 A. Yes.

24 Q. The claims in your patents, 17 and 18 that are at
25 issue here, these are related to the issue of reducing

Tzannes - Cross

1 differential delay between bonded transceivers; right?

2 A. That's one part of the claim, yes, that's right.

3 Q. And so you would agree that the technique for
4 reducing the differential delay between bonded transceivers
5 is only necessary if there is, in fact, a differential delay
6 between the bonded transceivers to be reduced; right?

7 A. I don't understand the question. Can you repeat it?

8 Q. Sure.

9 You would agree that a technique for reducing
10 the differential delay between bonded transceivers would
11 only be necessary if there is, in fact, a differential delay
12 or differential latency between those bonded transceivers;
13 right?

14 A. Well, there is difference in delay between the bonded
15 transceivers, that's why it needs to be reduced. So under
16 the hypothetical, it's not really realistic, that's the
17 reason why we invented this to use is because in practical
18 purposes, in real scenarios there is a difference in delay.

19 Q. Well, you were here for the opening statements;
20 right?

21 A. Yes.

22 Q. And both your counsel and I talked about a memory at
23 the receiver, right, so you would agree that there is a
24 memory on the receiving end that's capable of receiving
25 handling some amount of differential delay; right?

Tzannes - Cross

1 A. Yes, small amounts.

2 Q. Bonding is optional functionality for a DSL network
3 provider, you would agree with that?

4 A. What does that mean, operational?

5 Q. Meaning DSL network operators like a Windstream or an
6 AT&T does not have to use bonding; right?

7 A. Well, so bonding is useful to them because it enables
8 them to actually reach more customers and provide a higher
9 data rate, so they use it. I mean, they don't have to use
10 it, but they use it because it's useful to them.

11 Q. You can have single line DSL; right?

12 A. Yes.

13 Q. Do you know what max delay is, Mr. Tzannes?

14 A. Max delay?

15 Q. Max delay in the context of DSL, either one DSL
16 analysis or single line DSL?

17 A. That's a very interesting question. Are you talking
18 about the parameters that's in maximum DSL?

19 Q. Yes.

20 A. Which?

21 Q. IQ99.71, for example?

22 A. Can you point me to it so I can make sure I'm looking
23 at the right parameter.

24 Q. Sure. Can you turn to tab 2 in your binder, please?

25 A. Two. It should be the G997.I1 ITU standard.

Tzannes - Cross

1 Q. Are you familiar with the standard, Mr. Tzannes?

2 A. Of course.

3 Q. This is from June 1999; right?

4 A. Yes.

5 Q. That's a couple years before your patent; right?

6 A. Yes.

7 Q. Sorry. We were talking over each other.

8 A couple years before your application for your
9 patent; right?

10 A. Yes.

11 Q. If you go to page 29, do you see 7.3.8, maximum ATUC
12 DSL line delay interlever and then 7.3.9 maximum ATURV DSL
13 line delay, do you see those two sections I just pointed to?

14 A. Yes.

15 Q. Those refer to a max delay constraint that is a
16 maximum amount of delay allowed on a line under this 1999
17 standard; right?

18 A. Yes. This is for a single line, not a bonded line.

19 Q. Fair. I agree with you. But as of 1999, the ITU DSL
20 standards like this 997.1 constrained the latency on any
21 individual line to something called maximum delay; right.

22 A. Yes. There is only a maximum, yes, if you want to
23 call that a constraint, yes.

24 Q. In fact, this was also in the 994.1 standard, also
25 from 1999, right, sometimes called handshake, are you

Tzannes - Cross

1 familiar with that?

2 A. Yes.

3 Q. Okay. And let me take a step back. 997.1, the one
4 we were just looking at.

5 A. Yes.

6 Q. Do you have any role in the development of that
7 standard?

8 A. Yes.

9 Q. You did? Okay. You attended the meetings where the
10 provisions we just talked about, maximum latency were
11 discussed?

12 A. Yes.

13 Q. Yes? Okay.

14 MR. SCHUMAN: Your Honor, I move this document,
15 997.1 into evidence.

16 MR. PAUL McANDREWS: No objection, Your Honor.

17 THE COURT: Admitted without objection.

18 Q. Let's talk about 994 dot one Mr. Tzannes, this is tab
19 3 in your binder?

20 THE COURT: I'm sorry, Mr. Schuman, does this
21 document have an exhibit number?

22 MR. SCHUMAN: Mine does not. I don't know that
23 it does. We can add an exhibit number to it, Your Honor.

24 THE COURT: We'll do that later. Keep going.

25 MR. SCHUMAN: Thank you.

Tzannes - Cross

1 BY MR. SCHUMAN:

2 Q. Mr. Tzannes, tab 3, handshake 994.1, this is another
3 standard from 1999; right?

4 A. Yes.

5 Q. Did you play any role in the development of this
6 standard?

7 A. I was involved in all of the DSL standards.

8 Q. Turn for me please to page 18. Are you with me?

9 A. Yes.

10 Q. So table 9-D.1. Do you see where it says maximum
11 latency downstream in that table?

12 A. Yes.

13 Q. There is another standard that had a constraint on
14 the amount of maximum latency or maximum delay on any
15 individual line, any individual DSL line; right?

16 A. Right. Yes. For a nonbonded system, this is two
17 years before I even started the project on bonded.

18 Q. Right. Understood. So you would agree with me,
19 though, that for individual lines -- strike that.

20 You would agree with me that prior to the time
21 you filed your application, the concept of constraining the
22 latency on any individual line was already out there, for
23 example, in these standards?

24 A. Yes. These constraints, setting a maximum constraint
25 is not sufficient for a bonding system. If it was, then the

Tzannes - Cross

1 bonding standard wouldn't actually provide a more tighter
2 constraint, when it was standardized, the bonding standard
3 was developed. So this is a maximum, but it actually does
4 not provide the constraint that you need to be able to bond
5 a system.

6 Q. For at least a couple of years prior to the time you
7 filed for your patent, DSL lines were constrained by this
8 concept of max delay; right?

9 A. There was a maximum constraint, yes. Like I said, it
10 didn't work with bonding.

11 Q. Thank you.

12 I think you testified earlier you came up with,
13 you and your co-inventors came up with the idea for the '881
14 patent when you were still working at Aware; right?

15 A. Yes.

16 Q. At that time neither you nor anyone at Aware was
17 working on multi-pair bonding products; isn't that right?

18 A. The actual product side of it, no, we were inventing,
19 so we were actually designing new products. A lot of times
20 when you develop new technology you don't build a product
21 right away, you come up with new ideas.

22 Q. Aware at that time was not delivering ATM or
23 multi-pair bonding products; right?

24 A. At that time like I said we were doing research, we
25 haven't gotten to that stage yet.

Tzannes - Cross

1 Q. In fact, Aware never actually reduced to practice the
2 invention claims in 17 and 18 of the '881 patent; isn't that
3 right?

4 A. Well, as you know, counselor, we filed a patent on
5 it. That's a reduction to practice; right? So we told the
6 world how to do it. So we actually did reduce it to
7 practice.

8 Q. Aware at that time was not building bonding products,
9 either ATM or ethernet bonding products; right?

10 A. No, we weren't building. We were inventing at that
11 point in time, so we hadn't started building products yet.

12 Q. Aware never tested claims 17 or 18 of the '881 patent
13 in a product; isn't that right?

14 A. So remember when I explained how a business model
15 worked, we actually sold designs to chip companies. The
16 chip companies then sold those chips to product companies
17 such as 2Wire, they built the actual products and they would
18 test their own products. We didn't test other people's
19 products.

20 Q. I want to stop you there because you just suggested,
21 maybe I misheard you, that Aware sold designs to 2Wire.
22 That's not true.

23 A. No, I said for example.

24 Q. For example. Just so we're clear, so the jury is
25 clear, you mentioned a long list of customers. Aware never

Tzannes - Cross

1 sold any of its designs to my client, 2Wire; correct?

2 A. That's correct.

3 Q. Thank you.

4 Now, I want to go back to my question, though,
5 which was about testing. Understanding what you said, Aware
6 came up with designs and sold them to other customers, not
7 2Wire. My question was, Aware never tested the ideas in
8 claims 17 or 18 of your patent in a product; isn't that
9 right?

10 A. No, we did not.

11 Q. Aware never, therefore, never tested in a product
12 whether claim 17 or 18 of the '881 patent actually produced
13 a difference in latency between bonded transceivers; isn't
14 that right?

15 A. No, we did not test it, no.

16 Q. Thank you.

17 You testified that -- I think you testified you
18 started working at Aware around the summer of 1991; is that
19 right?

20 A. Yes.

21 Q. And around the late '90s, you assumed the title of
22 vice-president at Aware; correct?

23 A. Yes.

24 Q. And you managed Aware's patent portfolios in your
25 role as vice-president; right?

Tzannes - Cross

1 A. Yes.

2 Q. You also wrote many of Aware's patents; correct?

3 A. Well, I didn't really write the patents. We had a
4 patent attorney who writes the patents. I contributed to
5 the ideas and helped draft part of the patents.

6 Q. But you wrote many of the patents; right?

7 A. Well, I'm not trying to -- I'm not trying to say if
8 this is a trick question or not, I'm saying I don't want to
9 take credit for writing the entire patent because I'm not a
10 patent attorney.

11 Q. You contributed to some of the discussion and the
12 specification of some of Aware's patents; right?

13 A. Yes.

14 Q. And you received some payments from Aware upon the
15 filing of patent applications for which you were an
16 inventor; right?

17 A. Yes. It's very common in companies when you come up
18 with a new idea and file a patent on it, you'll get an
19 award, or a bonus, something in the \$500,000 range for
20 coming up with a new idea.

21 Q. And you received such a payment for the filing of the
22 application that led to the '881 patent that we're talking
23 about this week; right?

24 A. Yes.

25 Q. And then you get another payment from Aware when the

Tzannes - Cross

1 patent is issued, right? In other words, the application
2 goes through this prosecution process we have been
3 discussing and then actually is awarded by the Patent
4 Office, you would get another payment from Aware when that
5 happened; right?

6 A. Yes.

7 Q. In the case of the '881 patent, you received another
8 payment from Aware?

9 A. Yeah, like I said, this is very common practice,
10 companies want to encourage their engineers to invent, they
11 say come up with a new idea, we'll give you some money. The
12 Patent Office actually agrees that it's patentable, then you
13 get another award, this is usually in the \$500,000 range for
14 the work that you have done.

15 Q. So you got those two payments, though, for the '881
16 patent to the best of your recollection?

17 A. Yes.

18 Q. While you were still at Aware, Aware sold a bunch of
19 its patents to a company called Intellectual Ventures, do
20 you recall that?

21 A. Yes.

22 Q. You were involved in that transaction; right?

23 A. Yes.

24 Q. It was about a \$7 million transaction and you
25 received a commission personally of about five percent on

Tzannes - Cross

1 that; is that right?

2 A. Yes. That was an example, I was the person who kind
3 of -- it was a really unique role for me, but I kind of like
4 acted like, I brokered the sale of this patent portfolio and
5 as an award for doing that, they ended up giving me a
6 commission for selling the patent portfolio to Intellectual
7 Ventures. By the way, these were all my patents so there
8 was a lot of work in explaining why these patents were
9 worthwhile.

10 Q. About \$350,000 was your commission; right?

11 A. Yes.

12 Q. You were also involved in Aware's sales of its DSL
13 patents to TQ Delta; right?

14 A. Yes.

15 Q. Just so we're clear, TQ Delta and Aware are entirely
16 separate companies; right?

17 A. Yes.

18 Q. There is no corporate relationship between TQ Delta,
19 the plaintiff in this case, and your former employer, Aware;
20 correct?

21 A. Correct.

22 Q. Aware still exist; right?

23 A. It exist, but it doesn't do DSL anymore.

24 Q. TQ Delta, the plaintiff in this case, doesn't develop
25 any products; isn't that right?

Tzannes - Cross

1 A. Well, TQ Delta owns technology, but it's kind of
2 similar to Aware in some ways in the sense that it doesn't
3 develop a lot of products.

4 Q. It doesn't develop products? TQ Delta doesn't
5 develop any product specifications either; right?

6 A. Well, it doesn't develop products, it doesn't develop
7 product specifications either, right.

8 Q. I thought I heard you say earlier that Aware
9 developed designs and specifications and sold those to its
10 clients; right?

11 A. Yes.

12 Q. TQ Delta doesn't do that, it doesn't -- that is, let
13 me rephrase the question. You would agree with me that TQ
14 Delta doesn't develop product specifications either; right?

15 A. Yes.

16 Q. TQ Delta's only business is to license technology;
17 right?

18 A. Yes. TQ Delta is an innovator, they license
19 technology and patents.

20 Q. And you helped select the patents that Aware sold to
21 TQ Delta; right, you were involved in that transaction as
22 well?

23 A. I mean, somewhat, yeah.

24 Q. You worked with a law firm named Global IP to arrange
25 for the sale of the Aware's DSL patents to present it to

Tzannes - Cross

1 potential buyers like TQ Delta; right?

2 A. Correct.

3 Q. And you were paid another commission by Aware for the
4 sale of the DSL patents to TQ Delta; correct?

5 A. No.

6 Q. You were not?

7 A. No.

8 Q. You worked at Aware until about August of 2012;
9 correct?

10 A. Yes.

11 Q. After leaving Aware, you testified I believe on your
12 direct that you formed Tzannes Patent Management with your
13 brother, Michael Tzannes, to provide consulting services for
14 patent monetization efforts; correct?

15 A. Correct.

16 Q. And the plaintiff here, TQ Delta, retained your
17 business, Tzannes Patent Management for consulting services
18 in late 2012; right?

19 A. Yes.

20 Q. So right around the time of the transaction where TQ
21 Delta acquired the patents; right?

22 A. Yes.

23 Q. And TQ Delta has been Tzannes Patent Management's
24 only client since 2013; isn't that right?

25 A. Not the only client, but the main client for sure.

Tzannes - Cross

1 Q. Matt, can we play -- this is the testimony -- one
2 second, Your Honor.

3 MR. PAUL McANDREWS: Your Honor, if Mr. Schuman
4 intends to play what I think he plays, there might be a
5 timing issue. So it's not impeachment testimony, therefore
6 I object.

7 MR. SCHUMAN: I'll clarify that, actually. I
8 appreciate that, Mr. McAndrews.

9 BY MR. SCHUMAN:

10 Q. As of May 2013, Mr. Tzannes, TQ Delta -- strike that.

11 As of May 2019, so from the time you started
12 Tzannes Patent Management to May 2019, TQ Delta was your
13 business's only client; isn't that right?

14 A. No. I mean, we have had smaller clients, they're our
15 biggest client, I think I have said that before, but we have
16 had some smaller clients as well. I'm not arguing with you,
17 counselor, TQ Delta was the majority of our income comes
18 from TQ Delta.

19 Q. Can you play that, Matt, that clip. Text.

20 In another context, you gave some testimony,
21 Mr. Tzannes:

22 "Question: Who has been your primary client?

23 Your answer was: "Yeah. We pretty much have
24 really one client, 2Wire -- sorry, not 2Wire. TQ Delta. TQ
25 Delta has been our client since 2013. So for the past six

Tzannes - Cross

1 years my company, Tzannes Patent Companies, has worked
2 full-time doing work for TQ Delta."

3 Did I read that correctly?

4 A. That is correct. Let me just clarify all I'm saying.

5 Q. Thank you, Mr. Tzannes. Your counsel gets another
6 chance. Stop, thank you. TQ Delta paid Tzannes Patent
7 Management over \$6 million since 2013 for its consulting
8 services; isn't that right?

9 A. I got this question before, I went back and looked at
10 this. And so first of all, you understand to run a small
11 business --

12 Q. Mr. Tzannes could I just ask to you answer the
13 question, \$6 million, is that the number?

14 A. No, it's not.

15 Q. It's not?

16 A. Can I explain?

17 Q. Matt, can we play 159, 15 through 24, please?

18 MR. PAUL McANDREWS: Your Honor, again I object.
19 I don't think this is impeaching. He published without
20 hearing out my objection, Your Honor.

21 THE COURT: All right. If you think you have
22 laid a foundation, I don't know what's on the transcript,
23 but you can go ahead.

24 MR. SCHUMAN: Thank you, Your Honor.

25 BY MR. SCHUMAN:

Tzannes - Cross

1 Q. I'll read the testimony.

2 "Question: It's correct to say that Tzannes
3 patent management has received multiple millions of dollars
4 in fees from TQ Delta; is that correct?

5 "Answer: Yeah, yes. That's correct. We work
6 full-time for six years. We can do the math if you want to.
7 I can explain the compensation that we received was for
8 full-time work.

9 "Question: And that figure is approximately \$6
10 million; is that correct?

11 "Answer: Yes, that's correct."

12 So as of May 2019, your company, Tzannes Patent
13 Management, had received around \$6 million from TQ Delta;
14 right?

15 A. Like I was trying to say, I went back and looked at
16 those numbers again because that was when you asked me that
17 question, and you're approximately right, but if you look at
18 the actual averages that we got per year, after accounting
19 for expenses, overhead, we averaged about \$800,000 a year
20 from TQ Delta. That's a lot of money for a small business,
21 we have two partners, so on average, yes, we made -- my
22 brother and I made around \$400,000 a year. I'm not saying
23 that's not a lot of money. We have twenty-five years
24 experience, and this is what a person of my experience would
25 normally make if I worked for a technology company in the

Tzannes - Cross

1 valley.

2 Q.

3 MR. SCHUMAN: Your Honor, I move to strike as
4 nonresponsive.

5 THE COURT: I'm not going to do that. Go ahead.

6 MR. SCHUMAN: Thank you.

7 BY MR. SCHUMAN:

8 Q. Mr. Tzannes, that number, \$6 million was as we have
9 been discussing as of around May 2019. How much more have
10 you been paid by TQ Delta since then?

11 A. I don't know the number. But I'm going to guess,
12 Mr. Schuman, don't bring this up later and say that -- I'm
13 going to make another guess, I'm going to say it's probably
14 in the -- since May 20, 2019, you said?

15 Q. Yes.

16 A. Probably in the two to \$300,000 range, total.

17 Q. Thank you.

18 Turn for me please to Exhibit 5 in your binder.
19 You should have a little stamp in the lower right-hand
20 corner, DTX-145. Are you with me?

21 A. Uh-huh.

22 Q. This is a consulting services agreement between your
23 company and TQ Delta dated August 15, 2018; right?

24 A. Yes.

25 MR. SCHUMAN: Your Honor, I moved to admit

Tzannes - Cross

1 DTX-145.

2 MR. PAUL McANDREWS: Your Honor, if Mr. Schuman
3 intends to publish this, I would request a side-bar in
4 advance of this particular exhibit that's been the subject
5 of multiple rulings.

6 THE COURT: All right. Come over to side-bar.

7 (Side-bar discussion:)

8 MR. SCHUMAN: I can short-circuit this. First
9 of all, I was proposing to admit it. I don't know if your
10 objection is admission. Second of all, I'm very sensitive
11 to the Court's prior rulings and I have talked with
12 Mr. Hewlett about publishing it so that the whereas clauses
13 that were the subject of the Court's prior rulings, I think
14 it's the second -- the first, second and third do not get
15 shown.

16 THE COURT: But what is it that you're trying to
17 get out of this? He's already testified he's been paid a
18 lot of money. What is it in particular here that's worth
19 spending time on this?

20 MR. SCHUMAN: Well, this was -- I believe it was
21 admitted or this was covered at the Family Three trial as
22 well, this was over 3.16 million just for litigation
23 support, litigation and licensing support.

24 THE COURT: Well, I think you can ask him that
25 question, if the answer is in here somewhere, you can show

Tzannes - Cross

1 it to him, you don't need to introduce it into evidence,
2 just get the testimony.

3 MR. SCHUMAN: Fine.

4 MR. PAUL McANDREWS: Thank you, Your Honor.

5 (End of side-bar.)

6 BY MR. SCHUMAN:

7 Q. Mr. Tzannes, are you still with me on it's DTX-145,
8 tab 5 in your binder. Are you with me?

9 A. Yes.

10 Q. This is a consulting agreement from 2018, August 15,
11 2018, between your firm, Tzannes Patent Management and TQ
12 Delta; right?

13 A. Yes.

14 Q. And as reflected in here, this is an agreement to pay
15 your firm, you and your brother, \$3,136,666 at that time.
16 Correct?

17 A. Yes.

18 Q. Switching gears just slightly, Mr. Tzannes, you began
19 participating in DSL standards organizations in the early
20 1990s on behalf of Aware; right?

21 A. Yes.

22 Q. You have been participating in standards
23 organizations, standards meetings for over twenty years, I
24 think you said?

25 A. Yes.

Tzannes - Cross

1 Q. One of those groups was the ITU; right?

2 A. Yes.

3 Q. And I think we admitted in evidence on your direct
4 testimony the proposal that you submitted to the ITU to
5 start a G bond; right?

6 A. Right.

7 Q. And that's JTX-127. And you had filed your patent
8 application I think you testified on direct exam before you
9 submitted this proposal; right?

10 A. That is correct, yes.

11 Q. There is no mention of your file patent application
12 in JTX-127; correct?

13 A. That's not something that you would do in the ITU at
14 this point in time.

15 Q. My question was just a little different. You filed
16 the patent application, then you made the proposal to start
17 G bond, and nowhere in that proposal does it say JTX-127 I
18 have a patent application, does it?

19 A. Yeah, because that's not an appropriate thing to do.
20 The ITU has a process for filing patent declarations and
21 what you do is before the standard comes out, the companies
22 all submit their patent declarations and say we have
23 potential patents on this standard, and actually Aware was
24 the first company of all the companies in the industry to
25 submit such a patent declaration saying that we had patents

Tzannes - Cross

1 on G bond.

2 Q. I understand that, Mr. Tzannes. But at the time you
3 made this proposal, I think you said on your direct exam,
4 you took your ideas to the ITU to start G bond, you didn't
5 say in the proposal that you had a pending patent
6 application; correct?

7 MR. PAUL McANDREWS: Your Honor, I'm going to
8 object to this line of questioning as irrelevant,
9 potentially prejudicial, potentially irrelevant to any claim
10 issue, at least that's at issue in this trial, Your Honor.

11 MR. SCHUMAN: I don't have anymore questions
12 down this line, Your Honor.

13 THE COURT: All right. Well, then, I guess the
14 objection is moot.

15 BY MR. SCHUMAN:

16 Q. Mr. Tzannes, at the time you submitted this proposal
17 to start G bond, December 2001, there was already standards
18 body activity at T1E1.4 regarding standardizing DSL bonding;
19 isn't that right?

20 A. There was, correct.

21 Q. ITU ultimately accepted this proposal, JTX-127, and
22 started this group at the ITU G bond; right?

23 A. I didn't understand the question, sorry.

24 Q. It wasn't -- sorry. It wasn't a trick.

25 Your proposal was accepted, ITU started G bond

Tzannes - Cross

1 and you became the editor of G bond; right?

2 A. Correct.

3 Q. As the editor of the G bond standard, you chaired the
4 G bond sessions and maintained the draft of the standard;
5 right?

6 A. Yes, I held the discussions as the chairman of the
7 committee.

8 Q. And as editor you attended all the meetings where the
9 development of this G bond standard was taking place; right?

10 A. Yes.

11 Q. And you did not make any -- to G bond now,
12 Mr. Tzannes, you did not make any specific written
13 contribution for how to deal with differential delay in
14 bonded transceivers during the G bond meetings; isn't that
15 right?

16 A. As I've mentioned before, I did not make a written
17 contribution, but I shared my ideas with the committee.

18 Q. You're saying you talked with people about your
19 ideas; right?

20 A. Well, no, it's a formal meeting, so you have
21 discussions in the meeting, and I shared my ideas with the
22 committee on how to do this.

23 Q. And turn for me, please, to tab 8 in your binder.
24 Are you with me, tab 8 is the ITU-T G.998.2 standard; right?

25 A. Yes.

Tzannes - Cross

1 Q. I think you said the work was done in 2005 on your
2 direct exam; right?

3 A. It was completed in 2005.

4 Q. In fact, the cover of 998.2 there is a date 01/2005;
5 right?

6 A. Yes.

7 Q. So this is one of the standards that came out of your
8 G bond group; right?

9 A. Yes.

10 Q. Correct?

11 And G 998.2 is entitled ethernet-based
12 multi-pair bonding; right?

13 A. Yes.

14 Q. This is a standard that you worked on; right?

15 A. Yes.

16 MR. SCHUMAN: Your Honor, I move JTX-24 into
17 evidence.

18 MR. PAUL McANDREWS: No objection, Your Honor.

19 THE COURT: Admitted without objection.

20 (JTX-24 was admitted into evidence.)

21 BY MR. SCHUMAN:

22 Q. Are you familiar with the term pointer standard,
23 Mr. Tzannes?

24 A. Yep, I have heard that term. I mean, it means
25 different things sometimes, but what is it that you want it

Tzannes - Cross

1 to mean.

2 Q. Well G.998.2 is a pointer standard; isn't that right?

3 A. Well, I mean, it references another standard as part
4 of it, so you could call that I guess a pointer standard if
5 you want to. That's not an ITU term I would use.

6 Q. And the other standard it references is the IEEE
7 802.3ah standard; correct?

8 A. Correct.

9 Q. Right. And so IEEE is a different organization from
10 the ITU; right?

11 A. Yes.

12 Q. And at the same time as G bond was going on, there
13 was overlap with a group at IEEE working on 802.3ah;
14 correct?

15 A. Yes.

16 Q. JTX-24, the 998.2 standard, Mr. Tzannes, you didn't
17 actually write this document; isn't that right?

18 A. As a single person, no, this is -- standards are
19 written as a group effort. People make contributions,
20 written, verbal, like I said, and I maintained the document
21 as the editor. So I collected all the information and
22 assembled it and wrote certain sections. I did not write
23 the whole thing.

24 Q. This document was written by a guy named Jerry
25 Radcliffe from Hatterus Network; right?

Tzannes - Cross

1 A. Not the entire document no, Jerry Radcliffe
2 contributed to it, yes.

3 Q. Exhibit JTX-0024, the 998.2 bonding standard that you
4 were the editor of, it does not mention max differential
5 delay anywhere in there; isn't that true?

6 A. The 998.2 standard, I would have to go back and look
7 at that again, but as you pointed out, this is as you call
8 it a pointer standard, so it's actually referencing a
9 different document. An IEEE standard for some of these
10 things, I think it's in the other standard.

11 Q. And the 802.3ah IEEE standard that other standards
12 group we were just talking about, you attended some of those
13 meetings; right?

14 A. Yes, I did.

15 Q. Let's turn in your binder, Mr. Tzannes. It's tab 7.
16 It's the big thick document. That's the 802.3ah standard;
17 right?

18 A. Yes.

19 Q. That's the IEEE standard that we have just been
20 referring to that the 998.2 standard refers to; right?

21 A. Yes.

22 Q. In fact, it pretty largely incorporates certain
23 clauses from the 802.3ah standard; right?

24 A. Yes.

25 Q. That's what I meant when I called it a pointer

Tzannes - Cross

1 standard, it points to 802.3ah; right?

2 A. Well, it references sections, there are a lot of
3 things in the 998.2 standard that are different than Aware's
4 802.3ah.

5 Q. Can we put up JTX-24, the scope section.

6 A. Which one is JTX-24?

7 Q. It's the 992 standard.

8 A. Okay.

9 Q. So this is on -- if you're following with me,
10 Mr. Tzannes, in the hard copy, it's also up on the screen,
11 this is JTX-24.0007. Are you with me?

12 A. Yes.

13 Q. In the scope it says this recommendation specifies
14 portions of clause 61 of IEEE standard 802-3ah-2004
15 amendment to carrier sense multiple access with collision
16 detection. That's a mouth full. And there is an
17 abbreviation. Access method and physical layer
18 specification as a normative reference and identifies the
19 requirements for multi pair bonding in IEEE 802.3ah-2004
20 that are different in the United States. Did I read that
21 correctly.

22 A. Yes.

23 Q. Right. So the 998.2 standard specifies and builds on
24 clause 61 of IEEE 802.3ah-2004; correct?

25 A. Yes.

Tzannes - Cross

1 Q. And max differential delay, this concept that we
2 talked about already here actually comes from 802.3ah,
3 clause 61; isn't that right?

4 A. Yes.

5 Q. And you attended some of the 802.3ah meetings where
6 clause 61 was being discussed; is that right?

7 A. Yes.

8 Q. And in IEEE 802.3ah, you were not the person who
9 proposed constraining bonded lines by max differential
10 delay; isn't that right?

11 A. Well, so there is an old saying when it comes to
12 these standards meetings, it's the same clowns, a different
13 circus. What that means is basically it's the same people
14 at all these committees. The same people that go to the ITU
15 committee would also go to the IEEE, so the people at the
16 ITU and the people at the IEEE, there was enormous overlap,
17 so the members of my committee at the G bond committee at
18 the ITU and me also participated at the IEEE. So in the
19 industry, you got to understand, this is 2004, my idea was
20 out there, people knew it was my idea, so yes in the IEEE as
21 well, they adopted my idea, or our idea I should say, me and
22 my co-inventor's idea for using max differential delay.

23 Q. My question was a little bit different I think.
24 During the 802.3ah meetings, you were not the person who
25 proposed using max differential delay to limit differential

Tzannes - Cross

1 latency among bonded lines; isn't that right?

2 A. So, okay, I don't know what you mean by that exactly.
3 Like I said, the ideas came from me and from my
4 co-inventors, so these ideas ended up in the standard in
5 both places. So of course I -- what do you mean propose,
6 what do you mean by propose?

7 Q. Matt, can we go to -- hold on Matt.

8 Do you know who Hugh Barrass is, Mr. Tzannes?

9 A. Yes.

10 Q. Hugh Barrass was with a company called Cisco Systems;
11 right?

12 A. Uh-huh.

13 Q. And Cisco Systems participated in 802.3ah; right?

14 A. Yes.

15 Q. And Mr. Barrass made contributions regarding how
16 differential delay among bonded transceivers should be
17 handled in 802.3ah; right?

18 A. Yes.

19 Q. In fact, it was Mr. Barrass who made the proposal to
20 limit to some maximum the differential latency among bonded
21 transceivers in 802.3ah; isn't that right?

22 A. Yes. And he made that proposal after my -- he makes
23 this propose, he's aware of my idea. This happened all the
24 time, counselor, so if you have a good idea, other people
25 can actually support it, and they will make contributions by

Tzannes - Cross

1 saying hey, this is the way we should do this. So you're
2 talking about much later, you understand, this happened much
3 later, all these contributions, after my idea and my patent
4 was already published, it's already actually out there.

5 Q. Are you testifying, Mr. Tzannes, that's when Mr. Hugh
6 Barrass from Cisco Systems proposed limiting maximum
7 differential delay on bonded lines on 802.3ah he was
8 actually ripping off our idea?

9 A. No, I'm saying the opposite, I'm not saying that. I
10 can show you numerous contributions, I have made them, other
11 people have made them, that involve ideas that maybe other
12 people come up with. Like you said, I didn't invent the
13 Reed Solomon coder, but I like Reed Solomon code so I
14 propose it. Does that mean I'm ripping off Reed Solomon?
15 No. If it's a good idea, you propose it.

16 Q. You're aware there is a database maintained by the
17 IEEE, Mr. Tzannes, on the people who make comments on
18 standards as they're being developed at the IEEE?

19 A. I'm sure there is.

20 Q. You're aware that that database reflects a comment
21 from Mr. Barrass which tracks almost precisely the language
22 in the 802.3ah standard for dealing with differential
23 latency among bonded transceivers?

24 A. Say that again.

25 Q. You're aware that the language in the comment from

Tzannes - Cross

1 Mr. Barrass in the IEEE 802.3ah database tracks nearly word
2 for word the language that winds up in the 802.3ah standard
3 for how to deal with differential latency between bonded
4 transceivers?

5 A. I'm not surprised, if Hugh made a proposal, again,
6 based on my idea that he word it in a certain way that
7 standards committee liked the wording, they may have adopted
8 his language.

9 Q. Can you put up the comparison.

10 Mr. Tzannes, at the top is Mr. Barrass's comment
11 in the IEEE 802.3ah database for how to deal with
12 differential latency among bonded transceivers. He says the
13 PMD control of aggregated links must ensure that the maximum
14 latency difference between any two aggregated links
15 corresponds to no more than 64,000 bit times. This must be
16 achieved by adjusting the bit rate, error correction and
17 interleaving functions in the PMA/PMD of each link. Note
18 that the burst noise protection offered by the error
19 correction and interleaving functions is directly
20 proportional to the latency, therefore, it is logical that
21 multiple aggregated links in the same environment should be
22 optimized to have similar latencies.

23 Did I read that correctly?

24 A. Yes.

25 Q. Okay. And did you have an independent recollection,

Tzannes - Cross

1 as you sit here today, Mr. Tzannes, that that was
2 Mr. Barrass' contribution to 802.3ah?

3 MR. PAUL McANDREWS: Your Honor, I object under
4 402 and 403 as a defense that has never been set forth. I
5 request a side-bar.

6 THE COURT: I don't think it actually is a
7 defense, but that doesn't mean that it's not relevant so I'm
8 going to overrule the objection.

9 MR. PAUL McANDREWS: Thank you, Your Honor.

10 BY MR. SCHUMAN:

11 Q. And then what we have here, Mr. Tzannes, this is
12 actually the language -- the lower part of the slide is
13 actually the language in the 802.3ah standard, the one
14 that's incorporated into 998.2; right?

15 A. Right.

16 Q. And it starts out by saying the PMD control of
17 aggregated links controls the maximum latency difference
18 between any two aggregated links. Pretty similar to the
19 first sentence of Mr. Barrass' comment; right?

20 A. Yes.

21 Q. The difference is actually the must ensure that is
22 removed when we get to the 802.3ah standard for Mr. Barrass'
23 comment; right?

24 A. Yeah, I see that.

25 Q. Okay. And then the next sentence that was actually

Tzannes - Cross

1 in the standard says, This is achieved by configuring the
2 bit rate, error correction, and interleaving functions in
3 the PMA/PMD of each link.

4 That's pretty close to what Mr. Barrass said in
5 the second sentence of his comment; right?

6 A. Yes.

7 Q. And actually the difference is Mr. Barrass said this
8 must be achieved by adjusting the bit rate, error
9 correction, and interleaving function. And when we get to
10 the final standard, it no longer says this must be achieved;
11 right? The must be is removed; right?

12 A. Yes.

13 Q. And then the third sentence winds up in the final
14 standard says, The burst noise protection offered by the
15 error correction and interleaving functions is directly
16 proportional to the latency, therefore it is logical that
17 multiple aggregated links in the same environment should be
18 optimized to have similar latencies.

19 And the only difference between that third
20 sentence of what's actually in the standard and what
21 Mr. Barrass' comments should be in the standard is the
22 removal of the words note that; correct?

23 A. Correct.

24 Q. You knew Mr. Barrass; right?

25 A. Yeah.

Tzannes - Redirect

1 Q. He since passed away. You know that; right?

2 A. I know.

3 Q. Did you ever tell Mr. Barrass that you had a patent
4 dealing with what he was proposing here for IEEE 802.3ah?

5 A. Oh, he knew it. He knew it already.

6 MR. SCHUMAN: Thank you, Mr. Tzannes. I don't
7 have anymore questions for Mr. Tzannes.

8 THE COURT: Any redirect?

9 MR. PAUL McANDREWS: Yes, Your Honor, just a few
10 questions.

11 THE COURT: Sure.

12 REDIRECT EXAMINATION

13 BY MR. PAUL McANDREWS:

14 Q. Could you please -- I'm sorry would you please put --
15 go ahead.

16 MR. SCHUMAN: Your Honor, I want to move to
17 admit JTX 25. It's the joint trial exhibit that's the
18 802.3ah standard.

19 MR. PAUL McANDREWS: Without objection.

20 THE COURT: Without objection.

21 (JTX 25 was admitted into evidence.)

22 MR. PAUL McANDREWS: Would you please put back
23 up on the screen the comments from Mr. Barrass that
24 Mr. Schuman was just presenting to him?

25 BY MR. PAUL McANDREWS:

Tzannes - Redirect

1 Q. Mr. Tzannes, do you notice up at least in the
2 illustration I see, what is the date on the draft comments
3 of Mr. Barrass?

4 A. It's 2002.

5 Q. And did that predate your invention, Mr. Tzannes?

6 A. No.

7 Q. Okay. And I think Mr. Schuman kept referring to you
8 simply attending IEEE meetings for the 802.3ah. What was
9 your role at the IEEE as it related to bonding?

10 A. Yeah, I was actually the editor of the bonding
11 portion of the standard at the IEEE.

12 Q. And if you would please pull up, I think it was Tab 7
13 in the binder that Mr. Schuman provided. JTX 0025. Oh, I
14 don't know if you can see it, Mr. Tzannes but lower
15 right-hand corner there, do you see the date of the adoption
16 of this?

17 A. Yeah, it's September of 2004.

18 Q. And that does not predate your invention, does it,
19 Mr. Tzannes?

20 A. No, it's like three years later.

21 Q. Okay. Can we pull up JTX 0001 again. And if you pan
22 in on the related U.S. application data, down a little bit.
23 Right there.

24 And Mr. Tzannes, what was the original filing
25 date of your patent application?

Tzannes - Redirect

1 A. October 5, 2001.

2 Q. Okay. Just a couple other topics I'd like to briefly
3 cover with you. I think Mr. Schuman said that TQ Delta's
4 just in the business of licensing.

5 Is that all you do for TQ Delta?

6 A. No. I do technology development for them as well, as
7 I said, I have attended standards meetings and continue to
8 invent.

9 Q. Can you think of an example of an invention you've
10 come up since you've been working for TQ Delta?

11 A. Yes. I mentioned before it's a new form of power
12 savings for DSL devices. Many of them are always on now in
13 your home, and that's not a good idea for the environment,
14 of course. And so the standards body -- we made a proposal,
15 and the standards body adopted a new technique that we had
16 invented that enables basically power savings in -- in DSL
17 devices.

18 Q. Mr. Schuman also made reference to a roughly \$3
19 million payment that was made to Tzannes Patent Management.
20 That was not in addition to the \$6 million that Mr. Schuman
21 also discussed --

22 A. No.

23 Q. -- was it?

24 A. No.

25 Q. Okay. Was the \$6 million that was paid to Tzannes

1 Patent Management over the six-and-a-half, seven years, was
2 that just for this case, Mr. Tzannes?

3 A. No. No. Like I said, my company, my small business,
4 Tzannes Patent Management, has worked for TQ Delta full time
5 for the past six or seven years now. And so we do standard
6 development for them, technology development, support
7 prosecution. I mentioned all the different areas that we
8 worked in before.

9 MR. PAUL McANDREWS: Thank you, Mr. Tzannes. I
10 have no further questions.

11 THE COURT: All right. Mr. Tzannes, thank you.
12 You may step down. Watch your step. Okay.

13 THE WITNESS: Thank you. Can I just leave this
14 here?

15 THE COURT: Yeah, just leave it there. So
16 members of the jury, we're going to take our afternoon break
17 for 15 minutes, and we'll start again at about 20 of 4:00.

18 Okay. Can we take the jury out, please?

19 (Jury leaving the courtroom at 3:28 p.m.)

20 THE COURT: All right. So who's your next
21 witness going to be?

22 MR. WIMBISCUS: Abha Divine.

23 THE COURT: Okay. And I expect you're going to
24 have another witness after her today?

25 MR. WIMBISCUS: Yes, Your Honor, we have some

1 deposition designations and then Dr. Cooklev.

2 MR. PAUL McANDREWS: We have some deposition
3 designations. I just want to raise at this time your court
4 order relating to letting you know about when to close the
5 courtroom. There is a small portion of one of the
6 deposition designations that deals with the Broadcom
7 employee.

8 THE COURT: Okay. And who is the --

9 MR. PAUL McANDREWS: Dr. Yu.

10 THE COURT: Oh, Dr. Yu, you're going to do this
11 afternoon?

12 MR. PAUL McANDREWS: We're going to do this
13 afternoon. Most of it is not objectionable. I think
14 there's a small section that Broadcom wanted the courtroom
15 closed and sealed.

16 THE COURT: All right. Yes. Yes. Yes. Yes.
17 That's right. Sorry.

18 And in fact, I forget, you know, when I was busy
19 ruling on the Broadcom or the objections relating to Dr. Yu,
20 the couple of pages where you objected to the thing where he
21 was asked to find something, I forget now, find something of
22 the source code, I was inclined to sustain your objection.
23 It seemed to me to be irrelevant.

24 MR. ONG: Your Honor, that was actually our
25 objection.

1 THE COURT: Oh, well, I'm still inclined to
2 sustain whose ever objection it was. I thought it was the
3 other way around, but yes, obviously you're right. But in
4 any event, I'll still sustain it. So I hope you'll be able
5 to -- I didn't think we were getting to Dr. Yu today. In
6 any event, okay, see you again in a few minutes.

7 MR. PAUL McANDREWS: Thank you.

8 DEPUTY CLERK: All rise.

9 (Recess was taken.)

10 DEPUTY CLERK: All rise.

11 THE COURT: All right. Are we ready to go?

12 MR. SCHUMAN: Your Honor, on sequestration and
13 fact witnesses, and Mr. Tzannes was the first fact witness
14 so it's not too late, but I think fact witnesses need to go.
15 And we had a little bit of ambiguity about that during the
16 prior trial.

17 THE COURT: Okay. If we did have ambiguity,
18 fact witnesses upon request, and I hear a request, should be
19 sequestered.

20 MR. SCHUMAN: And by that, Your Honor, that
21 includes anybody who might testify in TQ Delta's rebuttal
22 case.

23 THE COURT: If they're a fact witness, yes, not
24 the expert witnesses.

25 MR. SCHUMAN: Right. So --

1 THE COURT: Right.

2 MR. SCHUMAN: -- so I think last time

3 Mr. Tzannes testified in the rebuttal case.

4 THE COURT: Okay. Well, if Mr. Tzannes wants to
5 keep the option of testifying in the rebuttal case, then he
6 should leave the courtroom. But if he's not going to do
7 that, then no problem.

8 MR. McANDREWS: Your Honor, I do have one
9 potential problem with that. The reason why Mr. Tzannes had
10 to testify in the last trial on rebuttal was because
11 Dr. Jacobsen basically threw a bomb into the courtroom and
12 said Mr. Tzannes took the idea from someone else. If he's
13 not around to hear that, how does he get on the stand and
14 defend himself if that's what's going to happen?

15 THE COURT: Well, you do it the old-fashioned
16 way. You ask them direct questions, and he answers them.

17 MR. McANDREWS: Okay.

18 THE COURT: So it's up to you whether you keep
19 him or whether you want to keep the option of calling him.
20 But if you do, then he needs to be sequestered.

21 Okay? Are we ready to go? Let's get the jury.

22 Ms. Divine, you can come forward, if you want.

23 (Jury entering the courtroom at 3:44 p.m.)

24 THE COURT: Okay. Members of the jury, welcome
25 back. Everyone, you may be seated.

Divine - Direct

1 Mr. Wimbiscus, you may proceed.

2 MR. WIMBISCUS: Thank you, Your Honor.

3 DEPUTY CLERK: Please state and spell your full
4 name for the record.

5 THE WITNESS: Abha Divine. A-B-H-A. Divine,
6 D-I-V-I-N-E.

7 DEPUTY CLERK: Please place your left hand on
8 the Bible and raise your right hand.

9 Abha Divine, after having been duly sworn under
10 oath, was examined and testified as follows:

11 DIRECT EXAMINATION

12 BY MR. WIMBISCUS:

13 Q. You may be seated, Ms. Divine. Good afternoon,
14 Ms. Divine.

15 A. Good afternoon.

16 Q. Would you please state your name for the record?

17 A. Sure. It's Abha Divine.

18 Q. Where do you live?

19 A. I live in Austin, Texas with my husband and my son.

20 Q. What do you do for a living?

21 A. I am an entrepreneur in the field of patent
22 licensing, and I'm a co-founder in TQ Delta.

23 Q. Now, Mr. Tzannes mentioned his involvement with TQ
24 Delta. Can you describe your relationship, if any, with
25 Mr. Tzannes?

Divine - Direct

1 A. Sure. So TQ Delta is a company we set up to help
2 companies like -- innovators like Aware unlock the value
3 from their -- from their patents and inventions that they
4 contribute in the marketplace. And as you heard, Marcos and
5 Michael Tzannes have spent a good part of their -- their
6 professional careers working in the field of DSL technology
7 and developing those technologies. And they now work with
8 us and represent us at the main standards body at the ITU
9 that we talked about just a little while ago.

10 Q. Do you have any college degrees?

11 A. I do. I graduated phi beta kappa from Southern
12 Methodist University where I received a bachelor of science
13 in electrical engineering and a bachelor of science in
14 applied math. After that, I went to graduate school at MIT
15 where I received my master of science in electrical
16 engineering. And then subsequently, I attended the
17 University of Texas at Austin and received my MBA with a
18 focus on strategy in finance.

19 Q. Please tell the jury how you developed your interest
20 in engineering.

21 A. Well, so I've been around technology and engineering
22 actually my whole life. My parents are both engineers. In
23 fact, my mom was, I think, if not -- the only woman in her
24 engineering class. My dad's an engineer too, as I said.
25 And so I grew up sort of going to their labs, you know,

Divine - Direct

1 going to their -- you know, going to their offices,
2 tinkering at home, you know, just sort of being interested
3 and talking about technology.

4 And so as I got older and I was developing my
5 interests in math and science in high school, I was -- I was
6 lucky enough to intern at Texas Instruments and Nortel, and
7 then later at Rockwell where I had the great opportunity to
8 intern and work on the Air Force One communication system.
9 And so that was really exciting and really cemented and
10 sparked my interest in communications.

11 Q. You testified you have a master's degree from MIT.
12 What was your area of study?

13 A. Well, so as I had developed this interest in
14 communications, I decided to pursue that at graduate school.
15 And so I focused on problems related to the transmission,
16 delivery of digital video.

17 Q. What did you --

18 A. And so --

19 Q. I'm sorry. Go ahead.

20 A. I was just going to say, and you know, just explain
21 that a little bit further. That's -- the kind of problems I
22 and my colleagues were working on are the kinds of -- kind
23 of form the foundation for some of the streaming services
24 that you see today like Netflix, or Hulu, or whatever.

25 Q. Thank you.

Divine - Direct

1 What did you do after graduating from MIT?

2 A. So I went to work. I got a job. I worked first for
3 IBM as an engineer where I continued to work on
4 communications-related technologies for efficiently
5 delivering video, digital video files. From there, I went
6 to a startup that focused on delivering hardware and
7 software for telephone companies to be able to deliver video
8 services to their customers.

9 And then from there, I went to Southwestern Bell
10 which became SBC Communications and then later AT&T.

11 Q. Now, during the time you worked for Southwestern
12 Bell, what did that company do?

13 A. So Southwestern Bell is one of the original baby
14 bells. And so the primary business initially was delivering
15 telephone service to our customers in our regions, and over
16 time we kind of evolved the business and extended it to be
17 one of the leading DSL providers in the -- in the nation as
18 well as other data services.

19 Q. Did you come to be involved with DSL during your time
20 period with Southwestern Bell?

21 A. I -- I did. I was involved -- you know, so starting
22 out, as I said, I worked on video services and communication
23 systems for -- as an engineer when I first started with
24 Southwestern Bell. And in that role, you know, early video
25 systems, based on the work I had been doing previously. And

Divine - Direct

1 then, you know, early Internet services and deployments.

2 And then from there, I moved to leading teams of engineers
3 and scientists working on the same sort of deployments and
4 service enhancements and advanced networks and offerings.

5 And I was promoted over time to lead all of
6 SBC's strategic direction as vice president of corporate
7 strategy. And in that role, I had responsibility, among
8 other things, for something we call Project Pronto which was
9 our market leading DSL deployment effort, and also the
10 planning of, you know, enhanced services and extensions that
11 we were going to offer, you know, over that -- over that
12 network.

13 You know, over time, I also took -- had
14 responsibility for SBC's data networking and operations
15 planning on a national basis. And so in that role, I was
16 responsible for guiding and overseeing technology selection,
17 determining the timing of the investment and deployments.
18 And you know, based on things like how fast is the standard
19 progressing or capabilities progressing, how -- what our
20 customers were demanding, what the service requirements
21 were, that sort of thing.

22 Q. Now, during your time at SBC and AT&T, what did you
23 understand were the benefits of DSL technology?

24 A. Well, so based on my work, you know, while I was at
25 SBC and AT&T, you know, I understood that DSL had a key

Divine - Direct

1 benefit which was and is the ability to carry high-speed
2 data communications over the existing and traditional
3 telephone network.

4 Q. What technology was originally used for Internet
5 access during this time period?

6 A. So you know, you think back, it was, you know, late
7 '90s, and the Internet was exploding, and you know, so lots
8 of consumers, lots of homes were getting on the Internet.
9 And what most people did was they used what was called a
10 dial-up connection, and so that entailed you had a modem at
11 your house, and you connected to your phone line. And then
12 if you used one of these systems, you'll remember there were
13 these kind of screeching tones while the connection
14 established. And so that's what most people used for
15 Internet connection in the early days.

16 Q. What, if any, problems were there with the use of
17 dial-up technology for Internet connection?

18 A. Well, so there were problems for both the network
19 operators and for the consumers for the network operator.
20 You know, the amount of data that was being carried was
21 really taxing, overtaxing the capacity of the network to
22 carry all of that traffic. And at the same time for a
23 consumer, the way consumers experienced it is, you know, you
24 have one phone line, so you're either using it to connect to
25 the Internet or you're using it for a voice call. You

Divine - Direct

1 really just couldn't do both at the same time.

2 Q. Now, from your experience, what impact, if any, did
3 the growth of the Internet have on these problems with
4 dial-up technologies?

5 A. So as the Internet continued to grow and people, you
6 know, were using it more, additional problems started to
7 emerge. So you know, I talked a little bit about the
8 telephone network was, you know, designed for carrying voice
9 calls, and so it really wasn't designed for the amount of
10 traffic that Internet connectivity required for or for the
11 long duration of connection that Internet connectivity
12 required.

13 And at the same time, you had the content that
14 people wanted to access on the Internet getting richer and
15 richer. So you know, it wasn't just text any more. It was,
16 you know, audio, and images, and video, and so all of that
17 required higher and higher bandwidth. And so this was, you
18 know, obviously a problem for the network operator.

19 Q. What options did the company consider to solve these
20 problems?

21 A. Well, so we -- you know, we considered a few options.
22 In my earlier work at SBC, we had looked at building a
23 fiber, what would be a fiber overlay network. And basically
24 that is the idea of putting in, you know, an entirely new
25 network and, you know, carrying traffic that way. And one

Divine - Direct

1 of the problems, one of the substantial problems with that
2 is that in order to do that, you know, it is what it sounds
3 like, you're building a whole new network. And so you're --
4 it's a lot of expense. It's a lot of time. You're
5 trenching the ground. You're disrupting streets, and
6 people's backyards, and all kinds of stuff to put this
7 network in place.

8 So the other alternative that we considered was
9 DSL over the telephone network that we did have. And this
10 turned out to be, you know, a really good solution for us
11 because, you know, it allowed you to use the existing
12 telephone network to carry this high-speed data. It allowed
13 you to -- it allowed customers to be able to use that
14 network, the phone connection for both the voice and data at
15 the same time, and it carried bandwidth or allowed bandwidth
16 and data bit high enough to allow access to that rich
17 content that our customers wanted.

18 So this is -- you know, this was a big deal
19 because it allowed us to offer our customers what they
20 wanted. Right. They -- you know, they take -- they -- even
21 though the phone networks were voice, it was going to allow
22 us to be able to provide to them the services that they
23 wanted, and you know, the Internet access, and access to
24 video, and things like that.

25 Q. So what, if anything, did SBC and AT&T do to pursue

Divine - Direct

1 the use of DSL technology?

2 A. Well, so we -- we embarked on a -- we embarked on a
3 very ambitious project. It was called -- I mentioned it
4 earlier -- Project Pronto. It was a \$6 billion investment
5 to bring DSL to our -- to our network so that we could
6 provide high-speed Internet services to most of our
7 customers in a very, very short period of time.

8 And then, you know, as the DSL technologies
9 continued to develop and the standards bodies adopted
10 those -- those advancements, AT&T and SBC were able to
11 implement those improvements, and that gave rise to the
12 ability to offer triple play. And so triple play is the
13 idea that you can carry, you know, your voice or telephony,
14 your Internet service and video services all over the same
15 telephone line using DSL technology.

16 Q. Did you observe whether there were any advances in
17 DSL during this time period?

18 A. Yeah, so, you know, as I said --

19 THE COURT: Excuse me. When you say, "this time
20 period," what time period are we talking about?

21 THE WITNESS: So this would have been, as I
22 said, late '90s, and early 2000s, and you know even to this
23 day. I mean, there's constant improvements to the network.

24 THE COURT: Okay. I'm sorry.

25 BY MR. WIMBISCUS:

Divine - Direct

1 Q. So now I'll reask. Did you observe whether there
2 were any advances of DSL technology during the late '90s and
3 early 2000 time period?

4 A. Yeah. So you know, these advances that are going on
5 are focused on a couple of things. First, you know, to
6 improve, as we have been talking about, bringing higher data
7 rates to the network and to data traffic and to improve
8 reliability. And so a couple of those advances, you know,
9 they're really key -- that are really key were VDSL2 and you
10 know, practical solutions for bonding.

11 And so why this was important is because it
12 allowed -- it allowed us to reach, you know, a critical mass
13 of our customers with those higher data rate and be able to
14 provide triple play like I was talking about. And so
15 without these advances, you would have to put further
16 equipment out in the field because typically your data rate
17 drops as you get further from the central office. And so,
18 you know, putting more equipment in the field adds
19 complexity, adds cost.

20 And so being able to use, you know, these
21 bonding solutions and to, you know, VDSL and some of those
22 things to bring those higher data rates further out was a
23 really important achievement. And so, you know, one of the
24 things that -- that without it, we would have had a very
25 short-lived VDSL solution, right, because we would have had

Divine - Direct

1 to move to that sort of fiber network much, much sooner.

2 Q. How did these advances in bonding relate to this
3 lawsuit?

4 A. Well, so as I said, the bonding solutions, you know,
5 were helping us with some very significant issues, rate and
6 reach. And so as -- so being able to keep those rates as
7 high as possible further out with reach -- reaching further
8 into the network was really important. And that's -- that's
9 a key aspect of what the technology allowed.

10 Q. How did the bonding standard affect the company's
11 ability to service its customers during this time period?

12 A. So our customers, you know, were increasingly asking
13 for higher speed data, triple play solutions, those sorts
14 of -- of improvements. And so being able to provide a
15 solution that extended the reach and performance of network
16 was important.

17 Q. Did you have any other job responsibilities while
18 working at SBC and then later AT&T?

19 A. I did. I -- I created and served as the president,
20 CEO of a company called -- a new business unit that we
21 created called SBC Knowledge Ventures which later we
22 rebranded to AT&T Knowledge Ventures.

23 Q. What was the business of Knowledge Ventures?

24 A. So Knowledge Ventures was a company we set up to own,
25 manage and license the intellectual property and the patent

Divine - Direct

1 assets of SBC and AT&T and --

2 Q. And what -- I'm sorry.

3 A. Well, and you know, why that was important is because
4 the -- the companies had traditionally invested heavily in
5 research and development, but they hadn't always been as
6 effective at marketing or unlocking the value from those --
7 from that investment that they had been making.

8 Q. What were your responsibilities as president and CEO
9 of Knowledge Ventures?

10 A. So -- so my responsibilities were to manage the
11 portfolio of intellectual property assets, the patent assets
12 of the AT&T family of companies on a worldwide basis. And
13 so what that involved was building and maintaining the
14 portfolio of patents that resulted from that investment in
15 research and development. It involved identifying the
16 valuable inventions and innovations in that we could license
17 and sell, and it involved overseeing and negotiating the
18 patent licenses for AT&T.

19 Q. What is a patent license?

20 A. So patent license is an agreement where a patent
21 owner provides the right to a patent user to make use of
22 that patent, build it into their product for service in
23 return for a fee. And that fee, you know, is typically
24 called a royalty.

25 Q. What did you find to be the benefits of licensing

Divine - Direct

1 patents, if any, in connection with your work at AT&T?

2 A. Well, so there's -- there's a few benefits. One, you
3 know, it allows the patent owner or the inventor to be -- to
4 be paid for the risk and investment that they take in and
5 the time they've invested in developing those innovations,
6 and so in a sense that continued investment, and new
7 invention and new innovation. And for companies that use
8 the invention, it gives them the right to use that in their
9 products and services and makes them, you know, able to
10 offer more and more advanced capabilities. And for the
11 customer, of course, it means you're getting access to, you
12 know, all those great inventions.

13 Q. Were you successful in your licensing efforts at
14 Knowledge Ventures?

15 A. I think so. We -- you know, while I was president,
16 CEO, we were -- we were recognized by an organization called
17 the National Task -- the National Knowledge and IP
18 Management Task Force as innovator of the year for our
19 innovative licensing programs where we were able to, you
20 know, license all kinds of inventions and technologies from
21 the company in something like well over 30 transactions over
22 a couple of years.

23 Q. Did you observe where there were any difficulties in
24 licensing patents while at Knowledge Ventures?

25 MS. WALSH: Objection; relevance.

Divine - Direct

1 THE COURT: Sustained.

2 Q. Did you observe whether -- withdrawn.

3 As of the time TQ Delta became involved with the
4 patent at issue in this case, did you observe whether 2Wire
5 or any of its affiliated companies had ever licensed any of
6 the Aware patents?

7 MS. WALSH: Objection.

8 THE COURT: Sustained.

9 BY MR. WIMBISCUS:

10 Q. You mentioned that TQ Delta is involved with the
11 continued development of DSL standard. Can you describe
12 that in more detail, please?

13 A. Sure. As I said, we're still continuing members of
14 the main ITU standards body for DSL and where we work with
15 others, we work to further enhance and extend and address
16 the kinds of problems that DSL and providers of DSL and
17 equipment providers in the DSL market face as they try to
18 extend and enhance the services.

19 Q. I would like to direct your attention to JTX-1 which
20 is the '881 patent. You have a copy in your binder. A
21 simple question, who owns the '881 patent at issue in this
22 case?

23 A. TQ Delta.

24 Q. Would you very briefly explain to the jury how TQ
25 Delta came to own the '881 patent?

Divine - Direct

1 A. Sure. So we're approached often by companies,
2 innovative companies and their representatives with offers
3 to acquire patents in their inventions, or to help them in
4 some way with their licensing. So in the case of Aware, our
5 background in communications and in DSL made us a great fit.
6 And we certainly -- Aware was an early participant and
7 contributor of DSL technology, developed innovation in the
8 DSL space, that made them the kind of innovative company we
9 like to work with.

10 Q. Ms. Divine, looking at the big picture here, what is
11 it that TQ Delta is hoping to achieve through this lawsuit?

12 A. Well, we stand ready and are certainly happy to
13 license our inventions so the market can use them, and so
14 we're seeking really one thing and that is for 2Wire to do
15 the right thing.

16 MS. WALSH: Objection.

17 THE COURT: So I'm going to sustain the
18 objection.

19 Q. What are you asking the jury to do in this case,
20 Ms. Divine?

21 A. Sure. So --

22 THE COURT: I'm going to sustain the objection.
23 Move on.

24 MR. WIMBISCUS: We have no further questions for
25 the witness, Your Honor. Pass the witness.

Divine - Cross

1 THE COURT: That you, Mr. Wimbiscus.

2 MR. WIMBISCUS: Thank you, Your Honor.

3 CROSS-EXAMINATION

4 BY MS. WALSH:

5 Q. Good afternoon, Ms. Divine.

6 A. Hi.

7 Q. So it's correct to say that TQ Delta does not
8 manufacture DSL modems; correct?

9 A. We do not manufacture products. We innovate.

10 Q. And TQ Delta also doesn't sell any DSL modems;
11 correct?

12 A. Right. As we said, we don't make products, we sell
13 products, we sell innovation and inventions.

14 Q. And TQ Delta also doesn't have any employees;
15 correct?

16 A. We don't. We have certainly assembled a team of
17 experts, you have heard from some of them, Marcos and
18 Michael have worked in the field for years. We have other
19 experts that we engage that, have Ph.D.s in engineering and
20 backgrounds in finance, backgrounds in licensing to assist
21 us in the work of the company.

22 Q. And that includes counsel for things like licensing;
23 correct?

24 A. It does, among others.

25 Q. And so you mentioned how TQ Delta purchased the '881

Divine - Cross

1 patent from a company called Aware; correct?

2 A. Yes.

3 Q. And that was in about 2012; is that correct?

4 A. Yeah, I think so.

5 Q. And along with -- in the transaction where TQ Delta
6 bought the '881 patent, it didn't acquire any other assets
7 in that transaction besides patents; correct?

8 MR. WIMBISCUS: Objection under 402.

9 THE COURT: I'm not sure I understand the
10 relevance of that.

11 Q. So beyond the sale of the -- or so there is no
12 further business relationship between Aware and TQ Delta;
13 correct?

14 A. No. I mean, we continue to innovate and participate
15 at standards and that's our business.

16 Q. But that's on behalf of TQ Delta and not Aware;
17 correct?

18 A. Yes.

19 Q. And then you also discussed a little bit your time at
20 SPC and AT&T; correct?

21 A. Yes.

22 Q. And you were a vice-president in corporate strategy;
23 correct?

24 A. Yes, I was.

25 Q. And that was kind of up to the time period of about

Divine - Cross

1 2003; correct?

2 A. I don't actually remember precisely. I'm sorry.

3 Q. But sometime in the early 2000s; correct?

4 A. Yeah.

5 Q. And then you began in something called AT&T Knowledge
6 Ventures; correct?

7 A. Yes. As I said, I helped create it and served as its
8 CEO.

9 Q. So you shifted gears a bit from corporate strategy
10 for networking to overseeing the worldwide IP portfolio for
11 AT&T; correct?

12 A. Well, I don't know that it's necessarily a shift, but
13 there is a different roles, different roles with the
14 company.

15 Q. And so you have heard the standard G.998.2 discussed
16 throughout this day; correct?

17 A. Yes.

18 Q. And that standard wasn't approved until about 2005;
19 correct?

20 A. Yes.

21 Q. And so at that time, you were working at AT&T
22 Knowledge Ventures on their patent portfolio; correct?

23 A. Right. But in that role, I'm responsible for
24 managing and building our portfolio and part of that
25 involved working with and across the business as innovation

Divine - Cross

1 was going on to help identify where do we need to be
2 innovating, where are we making innovations, what is it
3 that, as a result of all that investment of time and effort,
4 so I was involved because of my history and expertise in
5 that picture.

6 Q. But you didn't play any role in developing the
7 G.998.2 standard, did you?

8 A. No, unfortunately my days of participating at that
9 level were a little behind me at that point.

10 Q. You didn't attend any of the standards bodies meeting
11 for G.998.2; correct?

12 A. No, we had scientists and experts that did that, just
13 like we do now at TQ Delta.

14 Q. But that was for AT&T; correct?

15 A. Yes.

16 Q. And you didn't know about the '881 patent until you
17 had discussions with Aware about purchasing it; correct?

18 A. Yeah, I don't know that I knew specifically about the
19 patent.

20 Q. And Matt, could we go to the front cover of JTX-001,
21 please. And so as we talked about a bit before, this is the
22 '881 patent that's at issue in this case; correct?

23 A. Yes.

24 Q. And that patent was filed on October 4th, 2002;
25 correct?

Divine - Cross

1 MR. WIMBISCUS: I'm going to object, Your Honor.

2 THE COURT: I'm going to sustain the objection.

3 BY MS. WALSH:

4 Q. So the top of the '881 patent list Mr. Marcos Tzannes
5 as an inventor; correct?

6 A. Yes.

7 Q. And it also list a gentleman named Edmund Reiter;
8 correct?

9 A. I have been told it's Reiter, yes.

10 Q. And Mr. Reiter isn't an employee of TQ Delta;
11 correct?

12 A. I'm sorry?

13 Q. Mr. Reiter is not an employee of TQ Delta; correct?

14 A. He is not.

15 Q. And then it mentions a third gentleman,
16 Mr. Christopher Cahill. Do you see that?

17 A. I to.

18 Q. And Mr. Cahill isn't an employee of TQ Delta;
19 correct?

20 A. Correct.

21 MS. WALSH: Thank you, Ms. Divine.

22 THE COURT: Anything more from you,

23 Mr. Wimbiscus?

24 MR. WIMBISCUS: No further questions, Your
25 Honor.

1 THE COURT: All right. Ms. Divine, you may step
2 down. Watch your step. Just leave that stuff.

3 MR. McANDREWS: Your Honor, we're going to play
4 the videotape deposition testimony of the inventor,
5 Mr. Cahill.

6 THE COURT: All right. Before we do this, I
7 just want to elaborate a little bit on something I told you
8 at the beginning, and I think these attorneys partly
9 referred to it in their opening statement, which is before
10 trial there is an opportunity to do what is called take a
11 deposition of somebody who is a potential witness. And at a
12 deposition, the witness is put under oath, both sides are
13 present. They can ask questions. And because the testimony
14 is under oath when the deposition is played, because the
15 witness is not available for trial, it counts just like the
16 witness is here.

17 One thing I want to tell you, I haven't seen
18 this deposition before, but in these cases, cases like this,
19 the parties work together to cut up all the extraneous
20 stuff, so the deposition of Mr. Cahill, I don't know it may
21 be ten minutes long, that's not how long the real deposition
22 is, but because the parties agree to what they're cutting
23 out, you shouldn't be concerned that you will see it jump
24 from one time to the next time, because that's done by
25 agreement of the parties. So don't think somebody is trying

1 to hide something from you, that is just -- we're actually
2 doing it to save time.

3 All right. Go ahead.

4 (Videotape deposition of Christopher Cahill:)

5 Q. Good afternoon, Mr. Cahill.

6 A. Good afternoon.

7 Q. Could you please state and spell your full name for
8 the record?

9 A. Sure. Christopher William Cahill.

10 C-H-R-I-S-T-O-P-H-E-R, William, W-I-L-L-I-A-M, Cahill,

11 C-A-H-I-L-L.

12 Q. Where do you work?

13 A. At Qualcomm, Inc.

14 Q. What is your current title at Qualcomm?

15 A. Principal engineer.

16 Q. Can you describe your educational background since
17 high school?

18 A. Since high school? I have a bachelor of science
19 degree in electrical engineering, actually computer
20 engineering from the University of Massachusetts Dartmouth
21 campus.

22 Q. Then what was your next position after System Soft?

23 A. So then I worked at Aware in Bedford, Massachusetts.

24 Q. When did you start working at Aware?

25 A. Right after Memorial Day in 1996, day after Memorial

1 Day.

2 Q. And what kind of projects did you work on as a
3 hardware managing engineer?

4 A. So we were basically doing the hardware design of
5 ADSL modems.

6 Q. I've handed you what's been marked I believe as
7 Exhibit 514, and that is a copy of U.S. Patent Number
8 7,453,881.

9 Mr. Cahill, do you recognize this document?

10 A. Yes.

11 Q. And what is this document?

12 A. This describes a system that we developed for passing
13 data over two DSL lines, two or more DSL lines.

14 Q. And are you named as an inventor on this patent?

15 A. Yes.

16 Q. When you refer to passing data over two or more DSL
17 lines, do you refer to that as bonding lines?

18 A. Yes. That's another term for that.

19 Q. Was the system that is described in this patent, was
20 that part of a larger project?

21 A. We actually didn't have -- we didn't do this with the
22 intention of a project, that we had a project or product at
23 the beginning. We just knew it was a good idea and we
24 started to develop the ideas.

25 Q. Why did you know it was a good idea?

1 A. So we had some marketing information that the average
2 household had two or more lines, phone lines going to those
3 houses, and that in general the second line was unused and
4 we thought if we could come up with some technology that
5 would actually make use of the second line, you'd provide
6 higher speeds on DSL to households.

7 Q. Do you recall when you started working on DSL bonding
8 at Aware?

9 A. Well, it started with this patent. We developed a
10 lot of the concepts in this in the early 2000s.

11 Q. Do you recall working on DSL bonding at Aware prior
12 to 2000?

13 A. No.

14 Q. Starting back around summer of 2001, who else at
15 Aware worked with you on DSL bonding?

16 A. I'm sorry. In 2001?

17 Q. Yes.

18 A. Well, Marcos Tzannes and I had a series of meetings
19 basically reviewing the issues and trying to come up with
20 solutions for the various issues of bonding. We had maybe
21 three or four solid meetings.

22 Q. And those took place around the summer of 2001. Is
23 that correct?

24 A. Yeah, I think so.

25 Q. Did anyone else attend those meetings?

1 A. No.

2 Q. What did Marcos Tzannes contribute to the concepts of
3 DSL bonding that you were discussing in the 2001 time frame?

4 A. Yeah, I mean, I'd say that we had shared equal. It
5 was back and forth kind of thing. He would say what about
6 this problem? I'd say well, this is one way to fix it. I
7 would say what about this problem? He would say this is a
8 way to fix it. It was really kind of a 50/50, at least as
9 far as the technical work that we were going through here.

10 Q. Did your work on DSL bonding that started around 2002
11 or 2003, did that eventually -- was that eventually
12 incorporated into a product?

13 A. Yeah, there were kind of two phases. One was a
14 prototype that we could use for demonstrations and for
15 interoperability and then Aware had a chip team and the chip
16 team eventually folded all the work that we had done on the
17 prototypes into an actual ASIC, in an actual chip.

18 Q. And when was the prototype created?

19 A. So I think the prototype was kind of finalized in
20 2004. I specifically remember making trips that year to
21 Europe and some other places to interact with other
22 people's -- the other end of the phone lines, with other
23 people's equipment that were following a similar design as
24 ours on the other end.

25 Q. When did you first discuss patenting the concept of

1 DSL bonding?

2 A. In that very -- in our very first discussion when
3 Marcos told me about the idea of multiple phone line and the
4 potential there, as we were coming up with some of the
5 concepts in here, we were saying this seems very novel. So,
6 I think we had a patent angle on it almost from the start
7 because we had never, at least I had never seen any of these
8 concepts before.

9 Q. So in developing the ideas that became the DSL
10 bonding patents, did you and Mr. Tzannes discuss the concept
11 of latency?

12 A. Yes.

13 Q. And what is latency?

14 A. It's -- in DSL terms it was basically delay.

15 Q. And so what kind of delay is that?

16 A. Well, it would be when a certain data block or packet
17 enters a stream and exits the other end of that stream, the
18 other end of that system. It was the time to get through
19 from end to end.

20 Q. And do different twisted wire pairs have different
21 delays?

22 A. They can. And many times it would be how you have to
23 configure the modems for various line types that would also
24 add additional delay. So depending on the characteristics
25 of the wire, the modem itself could have delay based on the

1 algorithms that it wakes up and the certain blocks that get
2 turned on due to the conditions of the wire.

3 Q. And did latency create any problems in your
4 development of the DSL bonding patents?

5 A. I mean, it's a challenge, yes, and you have to deal
6 with that challenge. In particular, if you start
7 partitioning your data down to two different lines, on the
8 other end of that line you have to know how to reassemble
9 those data to have the original sequence of data blocks
10 entered in at the beginning. So if there was delay, you
11 would have to wait for -- if one line had significantly more
12 delay than the other line, you would have to wait for that
13 second line's or that first line's data to arrive before you
14 can you be reassemble the sequence of blocks again.

15 Q. Did you and Mr. Tzannes come up with any ways of
16 dealing with a difference in latency between two lines?

17 A. Yes.

18 Q. And what were those ways?

19 A. Well, maybe we can refer to them in the patent.

20 Q. So why don't we go back to I believe it's marked as
21 Exhibit 514, the '881 patent.

22 A. Yes, okay. So it might best be described on sheet 3
23 of 7.

24 Q. And so that's the page that is entitled sheet 3 of 7
25 from Exhibit 514?

1 A. Right. There are three diagrams, figures 3, 4 and 5,
2 and if you look at figure 4, that's showing a case where the
3 line conditions are equivalent on all three lines. This is
4 an example with three lines. And so in this case you can
5 see the original sequence that comes in 1, 2, 3, 4, and
6 because the conditions of the lines are equivalent, you can
7 assign the first cell to line one, the second cell to line
8 two, the third cell to line three, and keep rotating through
9 the sequence and expect them all to arrive at the same time
10 and at the same rate.

11 In the second diagram, this is an example with
12 two lines. This is indicative of a problem where the bottom
13 line, the lower line, is slower or has more latency than the
14 top line, so you have to assign more of the blocks to the
15 top line than to the bottom line.

16 Q. And so there you're referring to figure 5. Is that
17 correct?

18 A. Referring to figure 5. So on the receiving end, you
19 would have to -- would get cell number three at the same
20 time as you get cell number one and then you would have to
21 wait, you'd have to buffer and wait for cell number two
22 because two would have to come after one. So this is a
23 pictorial example of what we knew of the challenges, what we
24 knew of DSL lines and the various impairments that are on
25 lines that we would have to deal with with this invention.

1 Q. And then you used the term line conditions. What's
2 included in line conditions?

3 A. So line conditions could be noise on the lines, which
4 would have an impact on the data rates, and that could be --
5 there are a number of different I'll say faults or
6 conditions on a line that result in what we used to call
7 bridge taps or taps of wire that hang off the wire that
8 don't really belong there. Those could be a result of old
9 party lines and various methods for installing cables down
10 streets. So we were never really guaranteed that line one
11 would have the same length and the same noise as line two.

12 Another example would be line two was installed
13 long after line one was installed, tens of or decades after
14 line one was installed, so it may have a different path to
15 the house and a different wire technology. The wire could
16 be better, so it might be a faster line than the original
17 line, faster and lower latency.

18 Q. So as you're using the term, are line conditions
19 confined to just the wire itself?

20 A. Confined to the environment of the wire; the quality
21 of the wire. There could be damage to the wire, there could
22 be water in the binders of the wire. So all of these things
23 will have an impact on the eventual data rate and the
24 eventual latency of the data transmission.

25 Q. And in the next sentence it refers to,

1 "Alternatively, different PHYs can have, for example,
2 different data rates but use the appropriate coding or
3 interleaving parameters to have the same latency on all the
4 bonded PHYs." What does that sentence refer to?

5 A. So that's basically saying that the data rate
6 differences can be made up for with memory and the bonding
7 logic, but if you want to keep the latency equivalent,
8 really all you're doing is adjusting the coding and
9 interleaving. Those are the main algorithms that have an
10 effect on the latency. And so conceptually if you wanted to
11 have the same latency, you could allow different data rates.
12 So you could have equivalent delays but different data
13 rates, and it could simplify the logic. It's hard to --
14 it's hard to say what the ambition behind this sentence was.

15 Q. And so would this example involve setting the
16 latencies of each of the lines equal to one another?

17 A. Yes, I -- yes.

18 Q. And what coding parameters does this refer to?

19 A. So this is not really my expert -- area of expertise.
20 I didn't really work on this algorithm part of the modems,
21 so there are different -- there's Reed Solomon, there is
22 Viterbi decoding, there's a bunch of different coding
23 algorithms in DSL technology. And they all, I think they
24 all have some effect on latency. Certainly Reed Solomon did
25 and certainly interleaving did.

1 Q. And is interleaving another parameter that has an
2 effect on configuration latency?

3 A. Yes.

4 Q. Are you familiar with ITU-T standards that relate to
5 DSL?

6 A. When I was still at Aware, there was one standard
7 that I was familiar with, G.bond, but it might have had a
8 number associated with it. I don't remember the number, but
9 early on it was called G.bond.

10 Q. And were you familiar with G.bond because of your
11 work in DSL bonding?

12 A. Right.

13 Q. Did you attend any meetings of standards
14 organizations while you were at Aware?

15 A. No.

16 Q. Did you -- did anyone else that you know of at Aware
17 attend standards meetings?

18 A. Well, certainly Marcos Tzannes did.

19 Q. Okay. And was there an incentive -- are you
20 receiving an incentive from TQ Delta for this litigation or
21 anything like that?

22 A. No.

23 (End of videotape testimony.)

24 MR. McANDREWS: So Your Honor, we have one
25 more -- well, it's a 32-minute --

1 THE COURT: Play it.

2 MR. McANDREWS: -- video. I'm sorry, it's
3 shortened to 23, better news. So it's the videotape
4 deposition of Ben Miller, a 2Wire engineer.

5 THE COURT: All right.

6 (Videotape testimony of Benjamin Miller:)

7 Q. Would you please state your name for the record?

8 A. Benjamin M. Miller.

9 Q. Mr. Miller, do you understand that you're here today
10 to testify on behalf of 2Wire?

11 A. Yes.

12 Q. Did you discuss any documents, in particular, during
13 your preparation for today's deposition?

14 A. Yes. We have -- we talked quite a bit about a
15 particular document called the Uber Matrix.

16 Q. Is that U-B-E-R?

17 A. I believe so, yes, U-B-E-R.

18 Q. And what is the Uber Matrix?

19 A. Uber Matrix is a document that is -- is used to
20 communicate product requirements, amongst other things,
21 between AT&T and 2Wire.

22 Q. I'm sorry, a document used to communicate product
23 requirements, did you say?

24 A. Uh-huh.

25 Q. What is the Uber Matrix?

1 A. Okay. The Uber Matrix -- it's a -- it's a document
2 that details product requirements for various products, both
3 that have been -- already been delivered, as well as future
4 products that are planned to be deployed -- planned to be
5 developed and deployed.

6 And it basically lists -- it basically lists the
7 product requirements for the hardware and the software and
8 the functionality of the product.

9 What I can answer is this and that is that this
10 Uber Matrix contains information that would be specific to
11 2Wire that we would not expect to be shared with -- with
12 other customers. So the document that is stored on our
13 systems and that we share with AT&T in meetings, it -- it --
14 it should not be shared directly with competitors.

15 This -- let me re -- let me just add, the
16 document doesn't just contain requirements, it contains
17 responses to requirements. It contains writing from us
18 directly.

19 Q. Okay. Is it -- based on your understanding, is --
20 does this Uber Matrix take the place of a standard request
21 for proposal and response to a request for proposal?

22 A. Yes.

23 Q. Okay.

24 A. In AT&T's case, yes.

25 Q. So AT&T provides an Uber Matrix describing its

1 requirements?

2 A. Yes.

3 Q. '99?

4 A. And that's when I joined 2Wire.

5 Q. And what was your first role with 2Wire?

6 A. First role was to basic -- I -- I was working on DSL
7 technology. I was -- I started to try and bring up the
8 first -- the first product board. It was actually a
9 prototype board. But I was working directly on helping DSL
10 function, getting it to work.

11 Q. (By Mr. McAndrews): Okay. I'm sorry. Did you --
12 did you tell me what the -- your first title was with 2Wire?

13 A. DSP software engineer.

14 Q. Good morning, Mr. Miller. I'm Peter McAndrews. I
15 represent the plaintiff, TQ Delta. Could you please state
16 your full name for the record?

17 A. Benjamin Mark Miller.

18 Q. And what's your current address?

19 A. 14428 Iris Court, San Jose California 95125.

20 Q. Okay. And so do you generally understand that you're
21 here to testify on certain topics listed in Exhibit 91 as
22 the corporate designee of 2Wire?

23 A. Yes.

24 Q. And do you also understand that pursuant to
25 Exhibit 92, you're here to testify to other matters in your

1 individual capacity?

2 A. Yes.

3 Q. Exhibit 96 is the G.998.2 standard or Ethernet
4 bonding standard that you're familiar with?

5 A. That's -- yes.

6 Q. Okay. And does the 5168NV also do Ethernet bonding
7 of DSL lines?

8 A. Yes.

9 Q. In some instances, there is an NV after a 2Wire model
10 number, and other instances, there's an N. Can you tell me
11 what the difference is generally between an NV and an N
12 product?

13 A. My understanding is that the N refers to 802.11N
14 wireless --

15 (Reporter interruption.)

16 The Witness: And it refers to voice
17 functionality telephony.

18 Q. Are you also familiar with a 5268AC product?

19 A. Yes.

20 Q. And is the DSL functionality of the 5268AC the same
21 as the 5168NV?

22 A. Yes.

23 Q. But from a DSL perspective, it's -- is it identical?

24 A. Yes.

25 Q. Uses the same Broadcom chip set?

1 A. Yes.

2 Q. Handing you what was previously marked as Plaintiff's
3 Exhibit 25. Yeah. Can you tell me what Exhibit 25 is?

4 A. It's -- it's a piece of paper that -- that says,
5 "data sheet 5168NV," and it has the Pace logo.

6 Q. Do you understand that to be a data sheet for the
7 5168NV?

8 A. It appears to be.

9 Q. Okay. If you could direct your attention to Page 2
10 of that document -- do you see the section titled "DSL
11 modem"?

12 A. The print is poor, but I'm looking. Thank you.
13 Mm-hmm.

14 Q. And can you tell me whether that section under DSL
15 modem indicates that the product includes ADSL2
16 functionality, as specified in the G.992.3 standard?

17 A. Who -- so whoever created this document appeared to
18 make the -- wanted to convey the information that our modems
19 were generally compliant with these -- with these standards.

20 Q. (By Mr. McAndrews): And the standards include ADSL2,
21 ADSL2+, VDSL2 per 933.2; correct?

22 The Witness: In my individual capacity if I was
23 looking at this, it would appear to convey that -- that the
24 device is compatible with -- with the standards listed here.
25 The G.993.2 is listed on the page.

1 Q. (By Mr. McAndrews): Okay.

2 The Witness: So it applies to my previous
3 statement, as well.

4 Q. As is Ethernet bonding G.998.2?

5 A. It's also on the page.

6 Q. -- AT&T 5168NV Version 1.5." It bears Bates number
7 2Wire 00042024 through 2Wire 00042043. Can you tell me what
8 that document is?

9 The Witness: This document -- the -- on the
10 title page, it says, "Customer hardware requirement AT&T
11 5168NV, Version 1.5."

12 Q. Are you familiar with this document?

13 A. I don't think I'm personally familiar with it. I
14 mean, it doesn't ring a bell. I may have seen it in the
15 past, but I just can't -- can't remember.

16 Q. Can you take a moment to look at that and tell me if
17 it appears to be an accurate block diagram for the 35168
18 device?

19 The Witness: Is there any part of this chip --
20 more specific part of this chip that you'd like me to
21 comment on in my individual capacity by --

22 Q. Sure. So does it -- does it -- does it accurately
23 depict that the 5168 device includes a BCM 61 -- I'm sorry,
24 63168 digital chip?

25 The Witness: Yes.

1 Q. Is that consistent with your recollection about the
2 63168 chip?

3 The Witness: I -- I -- I think it is.

4 Q. Okay. And do you recall -- is it consistent with
5 your recollection that the 5168 includes an additional
6 analog front end, the BCM 6306 chip?

7 A. That -- it sounds familiar, yes. So based on my
8 recollection.

9 Q. Based on your recollection, that would be an accurate
10 depiction of the 5168?

11 A. Yes.

12 Q. And based on your recollection, is it -- does it also
13 accurately depict that there are two 6302 DSL line drivers?

14 A. Yes.

15 Q. And those are connected through an RJ14 connector?

16 A. Yes.

17 Q. So the RJ14 provides a link to two separate phone
18 lines?

19 A. Yes.

20 Q. And its -- the digital DSL chip, that implements two
21 DSL transceivers?

22 A. Yes.

23 Q. And each of those are -- each of those transceivers
24 are ultimately connected through an analog front end, a line
25 driver, and the RJ14 link to separate telephone lines?

1 A. Yes.

2 Q. (By Mr. McAndrews): So you've been handed a document
3 identified as Plaintiff's Exhibit 99. It's entitled, "Data
4 Sheet ECM 63168 High Performance Multimedia Multi-Mode
5 ADSL2+/VDSL2 Gateway." There's Bates numbers 2Wire 00004082
6 through 4603. Have you seen that document before; do you
7 know?

8 A. I may have seen it in electronic form. I'm not sure
9 I've seen this big -- seen it like this, but --

10 Q. Can you turn to Page 48 of this document, native
11 Page 48?

12 A. Okay.

13 Q. And do you see that there is a feature summary of
14 this chip set?

15 A. Yes.

16 Q. Did -- can you tell me, does this accurately reflect,
17 to your knowledge, the standards with which the Broadcom DCM
18 63168 chip operates in accordance with?

19 The Witness: I can -- I can speak to the terms
20 that are listed here that -- that I'm familiar with using
21 with this chip.

22 Q. (By Mr. McAndrews): With respect to G.998.2, PTM
23 bonding, did you find that the 63168 was not operating in
24 compliance with any aspects of that standard?

25 The Witness: Not that I'm aware of.

1 Q. (By Mr. McAndrews): So you previously testified that
2 2Wire maintains a document called the Uber Matrix; is that
3 correct?

4 A. Yes.

5 Q. So what I'm putting into evidence as exhibit -- what
6 I'm putting in as Exhibit 100 is an electronic file on a
7 thumb drive that was produced in native -- the -- the file
8 was produced in native form at 2Wire 00005009.

9 Q. (By Mr. McAndrews): So we're -- we're going to find
10 a way to mark this as Exhibit 100. This is available here.
11 We can put it into a computer and take a look at it, if
12 necessary. Hopefully that won't be necessary. So this is
13 exhibit --

14 Court Reporter: 101.

15 MR. SCHUMAN: This is your representation that
16 Exhibit 101 is an excerpt of what is on the flash drive that
17 we have marked as Exhibit 100?

18 MR. McANDREWS: Yes, our intent was to
19 accurately excerpt the portion of the Uber Matrix that
20 corresponds to a single product; in this case, the 5168
21 product.

22 Q. It's what we represent to be an excerpt from the
23 electronic file that was produced at 2Wire 00005009 and we
24 intended to excerpt the portion that was relevant to the
25 5168NV.

1 And generally, the requirement is specified in
2 column CO, where it says, "Requirement Specification"?

3 A. Well, it's also -- it's designated in CM "Unique
4 Requirement Number." So there's a unique requirement number
5 and a description.

6 Q. Can you tell me, other than the text in column CO, is
7 there any more specific description of what AT&T's
8 requirement is for that given unique requirement number?

9 A. Well, this is the official record of the requirement.
10 And there may be other communication about requirements, but
11 I'm not aware of it.

12 Q. So this is the formal recording of what the
13 requirement is?

14 A. Yeah. This is -- this is its formal recording.

15 Q. Okay. Now, column CN, can you tell me what that
16 column is used for?

17 A. I think -- well, R definitely means required,
18 saying -- if it says R, then it's not optional.

19 Q. And that -- that -- so that would indicate that AT&T
20 is telling 2Wire that that's a feature that is required in
21 the product supplied to them?

22 A. Yes.

23 Q. Okay. And then, as we were discussing, column CO is
24 a text description of the requirement?

25 A. Yes.

1 Q. And Column CP, can you tell me what Column CP is used
2 for?

3 A. Column CP, it -- it seems to be making a -- a claim
4 about the -- the status of compliance against that
5 requirement for a -- for a given code release, but the code
6 release is very specific. It's like -- in this case, CP
7 says 9.8.x, so that's not a -- that's not specific to a --
8 that's not a specific code release version.

9 But it -- it refers to -- it since -- since code
10 is released in stages over time, there are new requirements
11 added, and some requirements may be 9.8 release specific or
12 10.1 release specific. And it -- this is giving a general
13 idea of whether or not we comply or don't comply in a
14 certain code family. It's -- it's -- it can be -- you know,
15 by what's marked here, it's somewhat general.

16 Q. Okay. And in Row 3 of Column CQ, do you see there's
17 a legend there?

18 A. Yes.

19 Q. And --

20 A. Oh, there we go. Yeah.

21 Q. Okay. So C indicates that it is compliant with the
22 requirement?

23 A. Yes. Mm-hmm.

24 Q. And NC means not compliant with the requirement?

25 A. Yes.

1 Q. And NA means not applicable to the requirement?

2 A. Yes.

3 Q. PC means partially compliant with the requirement?

4 A. Right.

5 Q. Do you have an understanding that -- I'm sorry. Do
6 you have an understanding what latency is?

7 A. The word "latency", in networking, often is observed
8 with delay from -- between -- some sort of delay related to
9 some process.

10 Q. Okay. Are you familiar with the idea that the
11 process of interleaving and deinterleaving can add latency
12 to a DSL communication?

13 A. Yes.

14 Q. Okay. Are you familiar with the idea that in a
15 device running in a bonded mode, you can have a different
16 latency for Line 1 than for Line 2?

17 A. I would expect that two different lines can have
18 different latencies.

19 Q. How about the 5168NV? Does that operate in a bonded
20 mode?

21 A. It does.

22 Q. (By Mr. McAndrews): If you could go back to
23 Exhibit 101 that I've put in front of you -- it's an Uber
24 Matrix document for the 5168NV.

25 A. Yes. I see 101.

1 Q. Can you tell me whether this document accurately
2 reflects that the three releases, 9.8.x, 10.1.x and 10.5.x
3 of the 5138 NV complied with the requirement that they must
4 support Ethernet-based bonding of two DSL connections
5 complying with ITU TG.998.2?

6 The Witness: The document is marked C for each
7 of the code versions on this sheet in Row 440.

8 Q. (By Mr. McAndrews): Okay. And that indicates
9 compliance with the requirement?

10 A. The -- the C mark indicates compliance.

11 Q. Can you tell me what Row 445 refers to?

12 A. What this is saying, my -- my understanding what this
13 is saying is that a new device that has just been delivered
14 to a customer, when it comes on for the first time, it
15 should try to do -- it should try to connect in a -- with a
16 bonded connection first. It should attempt that first.

17 Q. Okay. And so in other words, it would -- it would
18 load the image for the bonded firmware first and attempt to
19 connect using bonding?

20 A. Yes.

21 Q. And then if it can't bond, then it would fall back to
22 a single line mode?

23 A. Yes.

24 Q. Do you understand that this document accurately
25 reflects that the 5168NV met that requirement for all

1 releases?

2 A. Yes.

3 Q. (By Mr. McAndrews): For the 5168NV, do you know
4 whether that product for releases 9.8.x, 10.1.x and 10.5.x
5 supported using different rates on the two bonded lines?

6 A. I expect that they did because I've used them with
7 different rates.

8 Q. Do you know that it -- whether it met the requirement
9 of a ratio of 4:1?

10 A. I -- I don't know specifically.

11 Q. But you do know that it supported different rates on
12 each bonded line?

13 A. Yeah. It's -- it was definitely capable of -- of
14 making bonded connections where the rates were not
15 identical.

16 Q. And when you say "where the rates are not identical",
17 does that mean there's -- there's a first rate on Line 1 and
18 a different rate on Line 2?

19 A. Yes. However, there are -- we're talking -- they're
20 different pieces of silicon, so I mean this is just
21 speculation about how the chip works. It's Broadcom's chip.
22 It's black box to me. And the code that controls it is a
23 black box to me, too.

24 Q. (By Mr. McAndrews): So the notes that you read about
25 the impulse noise protection contribution related to the

1 ITU, is that the -- is that the only subject matter that was
2 proposed by 2Wire as a contribution to the ITU?

3 A. I'm prepared to testify that -- that there were --
4 let me get back to the page -- we submitted some
5 contributions. So maybe more than -- there may be others.

6 Q. So some contributions related to the issue of impulse
7 noise?

8 A. Related to the problems of repetitive electrical
9 impulse noise, otherwise known as REIN, R-E-I-N.

10 Q. Okay. And you testified that those contributions
11 were not adopted and accepted into any standard?

12 A. Yes.

13 Q. Are you aware of any other contributions by 2Wire
14 that became part of an ITU DSL standard?

15 A. I'm not aware.

16 Q. Okay.

17 (Conclusion of videotape deposition of
18 Mr. Miller.)

19 THE COURT: All right. So Mr. McAndrews, I
20 assume you don't have any five-minute depositions left.

21 MR. McANDREWS: I think we have a six-minute.

22 THE COURT: Oh, well let's --

23 MR. McANDREWS: We have 15 and one just under
24 two.

25 THE COURT: Well, why don't we try to do one or

1 the other of them, and then we'll call it a day.

2 (Whereupon the courtroom was sealed and the
3 testimony was held under seal.)

4 THE COURT: All right. So that completes what
5 we're going to do today. Before I ask my courtroom deputy
6 to take you out, a couple of things. One is we do plan to
7 start at 9:30 a.m. tomorrow, and so make sure you get here
8 in time to get yourself comfortable and I will be in charge
9 of getting the lawyers all -- because they're all ready to
10 go, but then at 9:30 I want you all to be ready to go.

11 The second thing is this, I told you not to
12 communicate with each other or anybody else about the case.
13 Talking, electronic, the internet, so don't talk to anyone
14 about the case. And don't let anyone talk to you about the
15 case. If someone starts talking to you giving you their
16 theories or somehow or another, or maybe not even trying to
17 -- just trying to talk to pass the time of the day, it could
18 influence you in some way that you don't really anticipate
19 and that's not fair to the parties here, so don't let anyone
20 talk to you about the case either.

21 And then the last thing is, don't do any
22 research. You have heard a lot of terms today. The jury,
23 it's often a sort of catchup game to try to learn a lot of
24 stuff in a limited amount of time. But there is no homework
25 allowed. So if you don't get it, just don't worry about it,

1 come back tomorrow and there will be more. But don't look
2 up anything on the internet. Don't ask -- if you're related
3 to an engineer of some sort, don't ask that person to
4 explain something to you. Make sure everything you learn
5 about the case you learn here in court with your fellow
6 jurors in front of the parties, that's the only way to give
7 a fair trial to these parties. All right? So have a good
8 evening and I will see you tomorrow.

9 (Jury leaving the courtroom at 5:00 p.m.)

10 THE COURT: All right. Everyone be seated.

11 Ms. Haynes, the little excerpt that we just
12 played of Dr. Yu, did I need to seal the courtroom for that?

13 MS. HAYNES: I will need to confer with my
14 client by you but my understanding that the capability of
15 what the chips could do could be a trade secret, so we can
16 get the transcript and we'll look into that.

17 THE COURT: Okay. I was kind of expecting that
18 we were sealing it because stuff from the source code was
19 going to be there, I thought that's what we were
20 concentrating on. I think it's sealed for now, but as you
21 obviously know, I don't want to be over sealing and so -- in
22 any event.

23 MS. HAYNES: Understood, Your Honor. I think
24 initially we were provided with much more extensive
25 deposition.

1 THE COURT: That's going to come at some later
2 time when the defendant plays it, and so I thought that was
3 the case.

4 All right. Is there anything else the parties
5 want to talk about this evening?

6 MR. McANDREWS: Just one quick housekeeping. I
7 wanted to move to admit JTX-13, JTX-27, JTX-28, and JTX-29.
8 They're from the Miller testimony.

9 THE COURT: Okay. Without objection?

10 MR. SCHUMAN: I didn't have that exact list. Do
11 you have any greater description of what they are? 26 and
12 27, I know what they are.

13 MR. McANDREWS: I believe 28 is the --

14 MR. SCHUMAN: I have 29.

15 MR. McANDREWS: The electronic full version of
16 the Uber Matrix, and that's maybe not necessary if there is
17 any objection. JTX-29 was an excerpt that was relevant to
18 the 61 --

19 THE COURT: Why don't we just stick with the
20 excerpt relevant part and not admit the native version.

21 MR. SCHUMAN: That was JTX-29, no objection to
22 that.

23 THE COURT: All right. And what's JTX-13,
24 because I remember something with that number.

25 MR. McANDREWS: It's Pace 5168 NV data sheet.

1 THE COURT: Is there any objection to that?

2 MR. SCHUMAN: 13 or 31?

3 MR. McANDREWS: It should be 13.

4 MR. SCHUMAN: It's possible I wrote --

5 MR. McANDREWS: It might be the same document.

6 THE COURT: Well, let's do this. Let's admit 27
7 and 29. 28 won't be admitted. And you all can review 13
8 and bring it up tomorrow morning.

9 MR. SCHUMAN: Thank you. We'll be able to work
10 it out, Your Honor.

11 THE COURT: I would imagine.

12 Anything else from your side, Mr. Schuman?

13 MR. McANDREWS: Your Honor, I think the
14 confusion was they're looking at the PTX numbers, we have
15 the JTX number for 13.

16 THE COURT: So work it out without bothering me
17 in this, please.

18 MR. SCHUMAN: We'll do it. I think we should be
19 able to work it out. 9 o'clock.

20 THE COURT: 9 o'clock. I just want to go back
21 to what I mentioned this morning, and just -- because it did
22 occur to me after I said I would like to get a revised final
23 jury instruction. Of course, since you submitted the jury
24 instructions for this case, we actually had the trial in the
25 other case, so probably some of the disputes in this one are

1 the same as the disputes in that one. So you would think
2 that I would do the same thing when faced with the question
3 the second time. In any event, can we say that you'll
4 submit some revised version by say 8 o'clock tomorrow night?

5 MR. McANDREWS: Yes, Your Honor.

6 MR. ONG: Yes.

7 THE COURT: And when you do that, can you also
8 e-mail a word version to my civil e-mail address?

9 MR. FARNAN: Yes.

10 THE COURT: Also, sometime tomorrow morning you
11 will give a me claim construction to sign.

12 MR. FARNAN: Yes, Your Honor.

13 THE COURT: That's all I have. If there is
14 nothing else, have a good evening and I'll see you tomorrow.

15 We'll be in recess.

16 (Court was recessed at 4:58 p.m.)

17 I hereby certify the foregoing is a true and
18 accurate transcript from my stenographic notes in the
19 proceeding.

20 /s/ Heather M. Triozzi
21 Certified Merit and Real-Time Reporter.
22 U.S. District Court.

23 /s/ Dale Hawkins
24 Certified Merit and Real-Time Reporter
25 U.S. District Court